

Vann, Bradley

From: Drustrup, Bob [DNR] [Bob.Drusrup@dnr.iowa.gov]
Sent: Tuesday, March 26, 2013 9:45 AM
To: Vann, Bradley
Cc: Scott.Heemstra@vogelpaint.com; Keith Delange
Subject: FW: Vogel's, 2012 Annual Report
Attachments: 2012 Annual Report - Vogel's.pdf

Categories: State

Brad,

Attached is the 2012 annual report for the Vogel Paint& Wax Site as we discussed last week. Please let me know if you have any comments regarding the annual report. Also let me know when you'd like to make a visit to the site.

Later,

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From: Keith Delange [<mailto:KDelange@geotekeng.com>]
Sent: Monday, March 25, 2013 8:28 AM
To: Drusrup, Bob [DNR]; Drusrup, Bob [DNR]; Scott.Heemstra@vogelpaint.com
Subject: Vogel's, 2012 Annual Report

Attached is the 2012 Annual Report.

Scott, I mailed you a paper copy on Friday, but thought you should have electronic copy too. Easier to send on to others that way.

We will probably get out to the site this week to do the first 2013 sampling event.

Let me know if any questions.

Keith

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Superfund

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**2012
ANNUAL GROUNDWATER
MONITORING REPORT**

**VOGEL PAINT & WAX CO. SITE
MAURICE, IOWA
March 2013**

**PREPARED BY: GEOTEK ENGINEERING & TESTING SERVICES
SIOUX FALLS, SOUTH DAKOTA**

GEOTEK #91-400

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1. Introduction

This remediation and annual groundwater monitoring report is provided in compliance with the requirements and conditions contained in the following documents: Iowa Consent Order No. 2003-HC-02; the 2005 Revised Groundwater Monitoring Plan approved by Iowa Department of Natural Resources (IDNR) in letters dated September 22 and November 22 and 28, 2005. In lieu of quarterly monitoring reports, a comprehensive annual monitoring report and electronic submittal of all current monitoring results is acceptable. The IDNR also agreed to semi-annual submittal of the contamination plume maps.

The September 22, 2005 IDNR letter stated: "In accordance with Article VI., Item 6.a. of the 2003 Consent Order, operation of the groundwater treatment system is not required at this time." To evaluate the migration of the contamination plume under natural groundwater conditions, Vogel's did not operate the air stripper system during the past 8 years; however, pumping for irrigation was conducted as noted below.

In July 2007, Vogel's implemented a Phytoremediation Pilot Study. The study consisted of the planting of 750 trees over a 1-acre portion of the contaminated soil and irrigating the trees with contaminated groundwater from monitoring well GMW-33 and recovery well RW-104. The initial phase of the study ran from July 2007 through freeze-up in November 2007. In May 2008, 1,800 trees were planted on an additional 2.5 acres north of the 2007 planting. The trees planted in 2008 were planted in the area where soil from prior remedial measures containing elevated levels of lead was placed. Irrigation water for the phytoremediation trees was applied during the 2007, 2008 and 2009 growing seasons. Limited irrigation (2 days) for replacement trees was completed in 2010. Irrigation water was not applied in 2011 or 2012.

The following is a summary report on 2012 groundwater monitoring completed at the Vogel Paint & Wax Co. site near Maurice, Iowa. Figure 1 is a site map showing the locations of the monitoring wells and Figure 2 is a topographic survey of the site.

2. Groundwater Gradient

Shallow Aquifer

Two aquifers are present below this site, a shallow aquifer and a deep aquifer. The shallow aquifer flows north from near GMW-21 and northeast from the two private wells west of the site, the Neiss and Bos wells. The shallow aquifer is approximately 7' below grade (bg) near TC-7, near the creek that flows northeast near the north boundary. The shallow aquifer is 16' to 18' bg at GMW-13 and GMW-14. The shallow aquifer is 12' to 13' bg in the two private wells located west of the site. The shallow aquifer begins near GMW-20. Cross-section drawings depicting the geology of the site based on the current assessment drilling are available in the 2005 Annual Comprehensive Groundwater Monitoring Report. The cross-sections indicate that the upper alluvial sand containing the shallow aquifer slopes to the north.

The shallow aquifer and the deep aquifer commingle near GMW-14 where the contamination plume begins to migrate south in the deep aquifer. The deep aquifer has a greater influence on the groundwater gradient where the two aquifers commingle. The historical groundwater data strongly indicates that the groundwater contamination plume migrates to the south in the deep aquifer. In over 20 years of sampling, the northern perimeter wells in the shallow aquifer have had negligible concentrations of contaminants. The contamination detected in the northern perimeter wells occurred during the soil excavation phase of the project in 1995 and 1997. Runoff entering the excavation likely caused a slight reversal of the groundwater gradient to the north resulting in low concentrations of contaminants. The shallow aquifer water levels in September 2012 were approximately 3 to 4 feet lower than in September 2011.

Deep Aquifer

The deep aquifer flows to the south-southeast and originates near GMW-14 where it merges with the shallow aquifer. It is approximately 25' bg at GMW-14 and 57' bg at GMW-24. The deep aquifer flows in a 5' to 15' thick stratum of outwash sand below 20' to 50' of glacial till. The outwash sand is present in all of the wells south of GMW-14. Figure 3 is a groundwater gradient map developed from water level data collected from the site monitoring wells on September 26, 2012. Recovery wells RW-102, 103, 104 & 105 were last pumped to the stripper tower in December 2004. In addition, the phytoremediation irrigation system has been off line since November 2009 and only passive remediation [phytoremediation and monitored natural attenuation (MNA)] is occurring at this time.

The deep aquifer gradient across the site is south-southeast towards the Floyd River. The aquifer gradient drops approximately 1' in 500', a gradient of 0.002. The 2012 annual rainfall of approximately 22" for Sioux County, Iowa was about 5" below normal. The water levels in the deep aquifer decreased approximately 1 to 1.5 feet from December 2011 to March 2012. The water table dropped approximately 0.5 feet from March to July 2012. The September 2012 water table was about 4.5 to 5 feet lower than was noted in September 2011.

3. Groundwater Analytical Data

Table 1 contains a summary of accumulated groundwater monitoring analytical data, including the data from 2012 monitoring events. Semi-annual groundwater monitoring was initiated in 2012. The semi-annual groundwater monitoring events were completed on March 19, 2012 and September 26, 2012. The laboratory analytical report for the September 2012 monitoring event is provided in Appendix A. The data from the March 2012 monitoring event was provided in GeoTek's July 2, 2012 report.

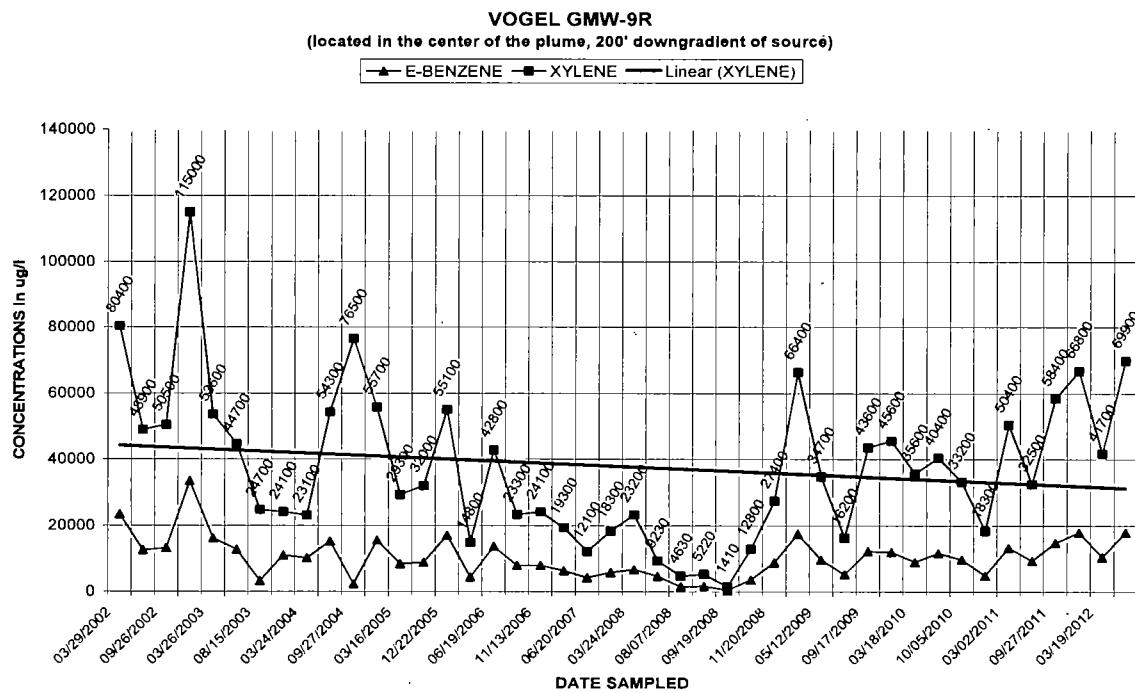
Figures 4, 5, 6 and 7 illustrate the estimated xylene, ethylbenzene, toluene and benzene plumes based on the September 2012 analytical data. Figure 8 is a topographic map showing the approximate extent of the xylene plume in relation to the Floyd River and the Southern Sioux Rural Water System (SSRWS) water supply wells. The SSRWS wells are located in the extreme northeast corner of section 5, the extreme southwest corner of the northwest ¼ of section 4 and the northwest ¼ of section 8, T93N R45W, Sioux County, Iowa. The SSRWS wells are approximately 8,500' to 10,000' down gradient of the plume.

The following is a discussion of the contaminant concentrations detected in key monitoring wells. The discussion begins with the northern most wells and continues with the wells to the south.

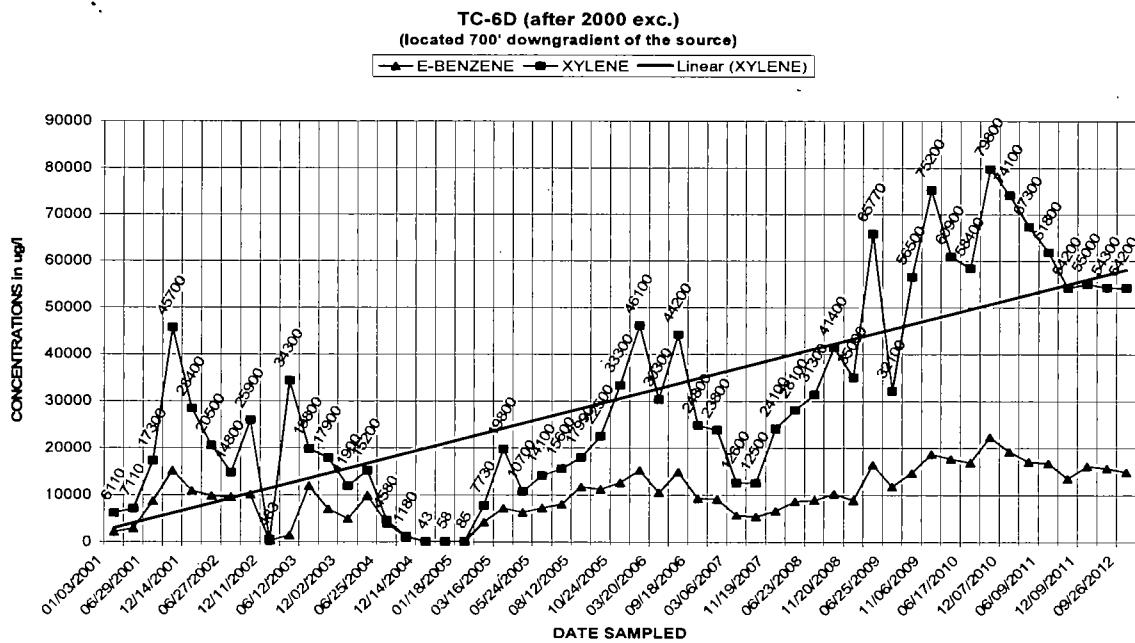
GMW-9R, GMW-13, MW-4R, and TC-6D (Source Wells)

These wells are source wells. They are located in the heart of the contamination plume. GMW-9R is located approximately 200' south and downgradient of the disposal area. GMW-13 and GMW-14 are located in the former 4-acre disposal area where solvent accumulated. MW-4R (MW-4 on site maps) is approximately 500' downgradient of the disposal area and has generally had measurable free product since installation in 1985. The greatest product thickness measured at MW-4R in 2012 was 0.96 feet on March 2, 2012. The product thickness in December 2012 was 0.48 feet. TC-6D is located approximately 700' south of the disposal area. The September 2012 xylene concentrations at GMW-9R and TC-6D were 69,900 ppb and 54,200 ppb, respectively.

The xylene concentration trend at GMW-9R over time is downward. Recent data, from December 2010 to September 2012, indicates an increasing trend in contaminant concentrations. The following is a graph of the accumulated xylene and ethylbenzene analytical data from GMW-9R:

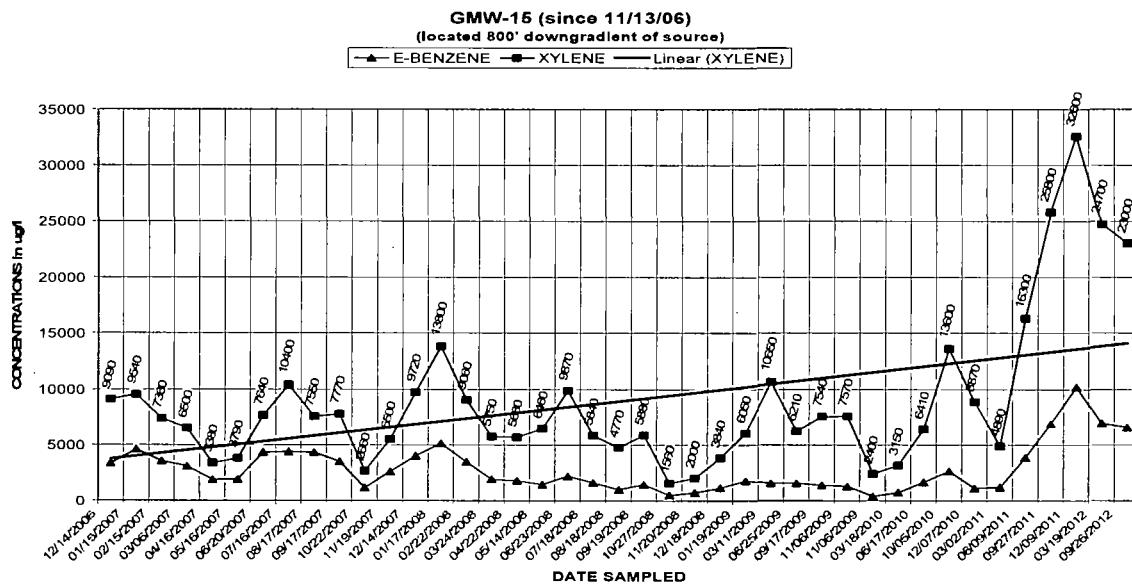


Low contaminant concentrations were present at TC-6D in 2004 (see graph below). This well is located within 10' of recovery well RW-104. It appears that during the pumping cycle, clean water was drawn into this recovery well from the east diluting the contamination and lowering the concentrations detected in TC-6D. When the pumping ceased, the dilution stopped and the contamination concentrations rebounded. An increasing trend in xylene concentrations over time is apparent. The highest xylene concentration was noted in October 2010. Since October 2010, the xylene concentration has been decreasing and appears to have stabilized, based on the results from the past 4 monitoring events.



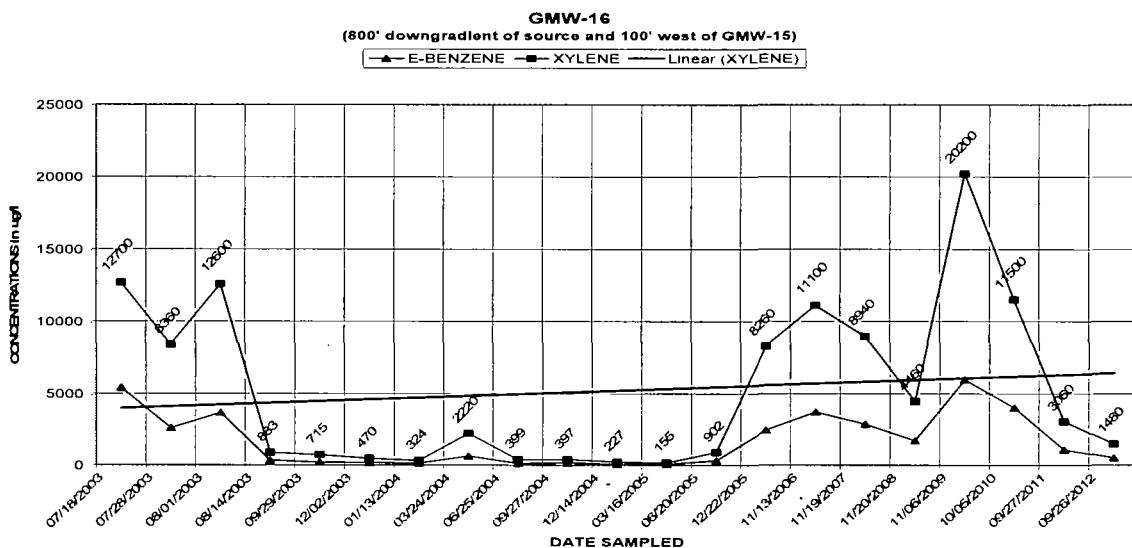
GMW-15

This well is located approximately 800' south and downgradient of the disposal area. Similar to TC-6D, a general downward trend in the contaminant concentrations also occurred in this well when the recovery wells were pumping during 2004. Since turning off the recovery wells in December 2004, the concentrations showed a steady increase. The December 2011 xylene and ethylbenzene concentrations were the highest noted to date at this well. Analytical results from 2012 resulted in lower concentrations.



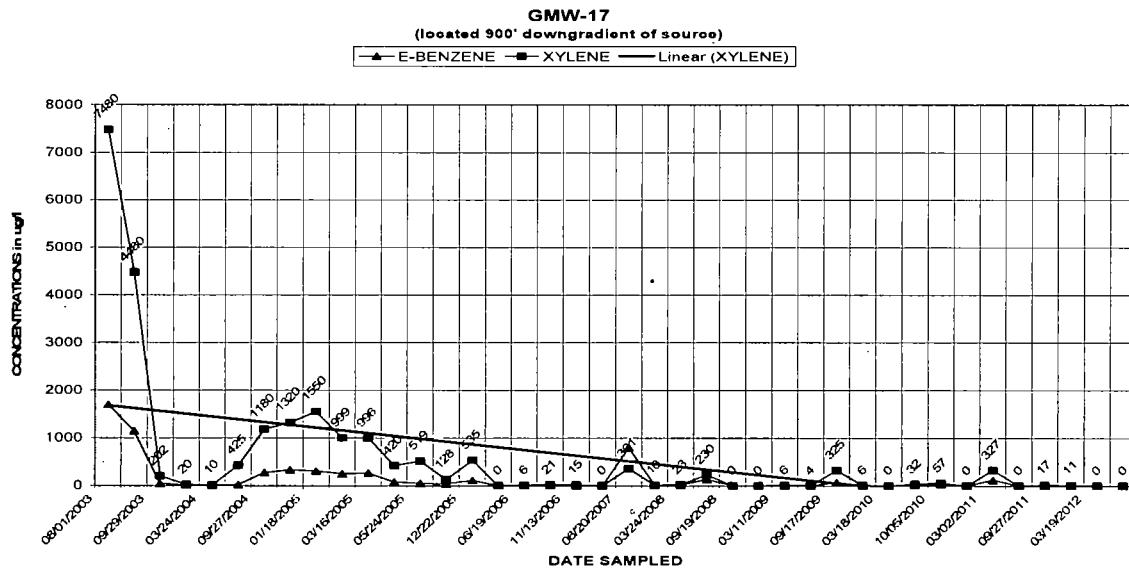
GMW-16

This well is located approximately 100' west of GMW-15. The concentrations in this well show a slight upward trend. GMW-16 is sampled on an annual basis. The xylene and ethylbenzene concentrations at GMW-16 appear to have peaked in 2009, with decreasing concentrations noted in 2010 through 2012. The xylene concentration on September 26, 2012 was 1,480 ppb, the lowest noted at this well since June 2005. The following graph illustrates the ethylbenzene and xylene concentrations over time.



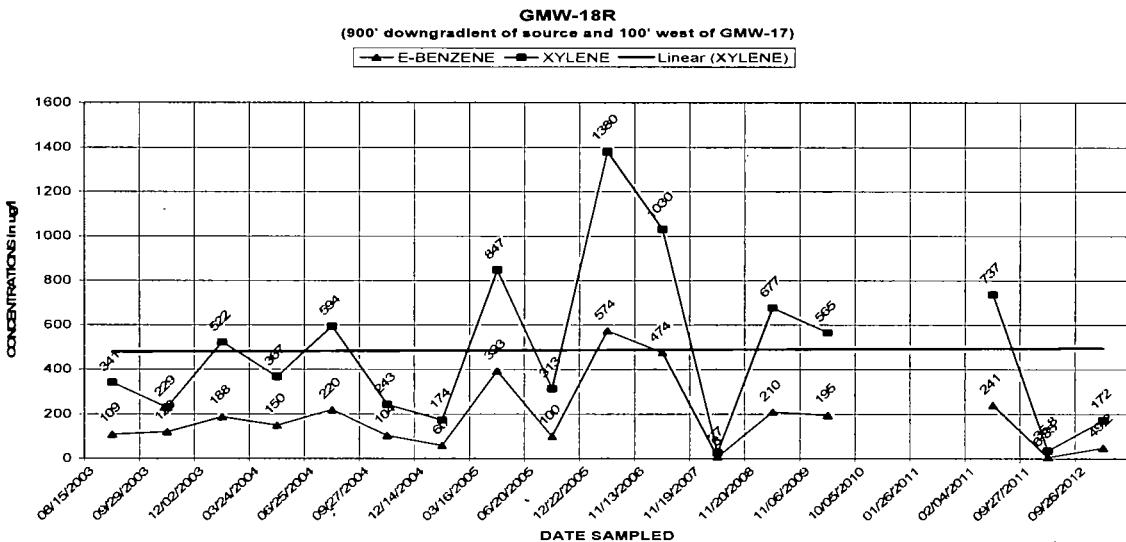
GMW-17

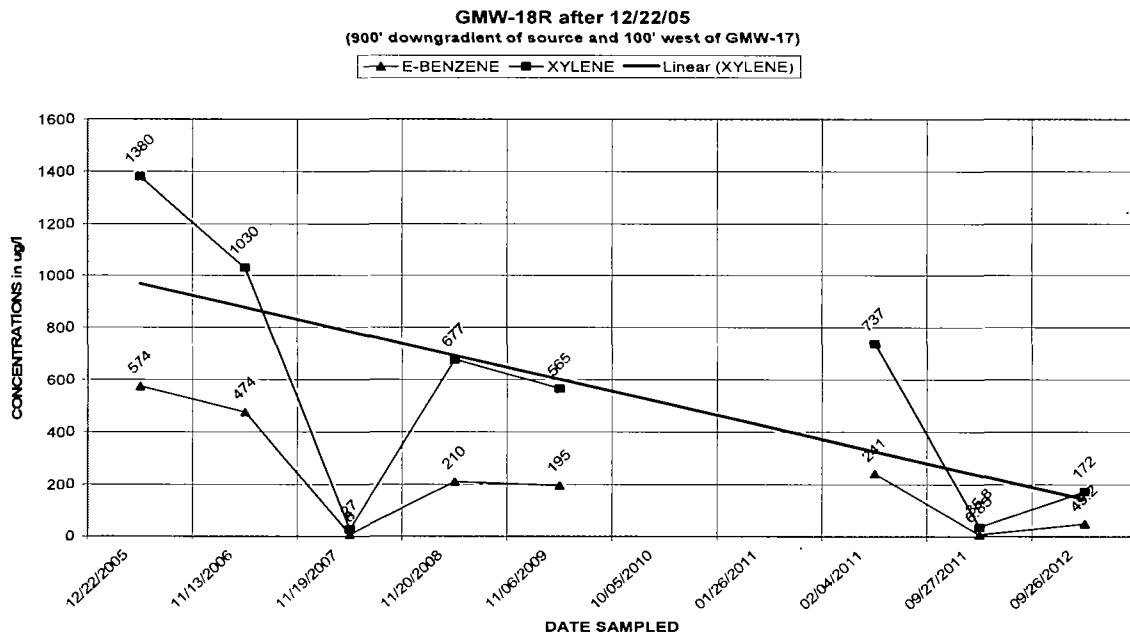
This well is located 100' downgradient of GMW-16. The xylene concentrations in this well averaged 735 ppb in 2005. Since that time, xylene and ethylbenzene concentrations have been low to non-detect. Xylene was non-detect for each of the 2012 monitoring events. The following is a graph of the xylene and ethylbenzene concentrations at GMW-17 over time.



GMW-18R

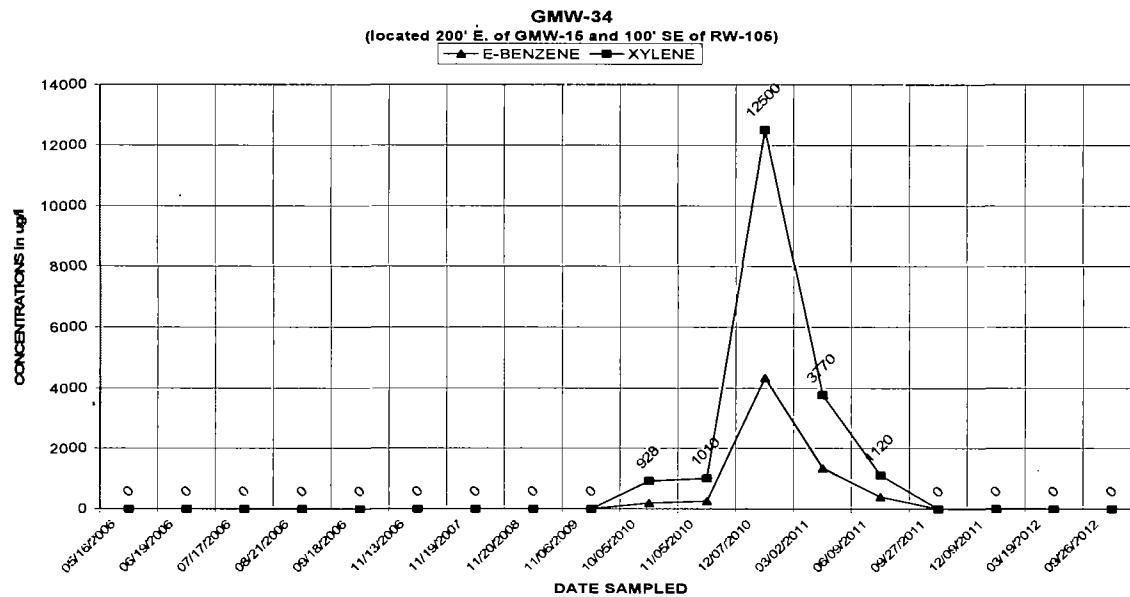
This well is located 100' west of GMW-17. The concentrations are below the limits, but have trended slightly upward overall, although the trend in the past 5 years has been downward (see "GMW-18R after 12/22/05" graph below). The bentonite seal separating the upper and lower aquifers at GMW-18 apparently failed prior to the October 2010 sampling event. A replacement well, GMW-18R, was installed in January 2011. The xylene concentration on 2/04/11 was 737 ppb. The xylene concentration resulting from the September 2012 monitoring event was 172 ppb.





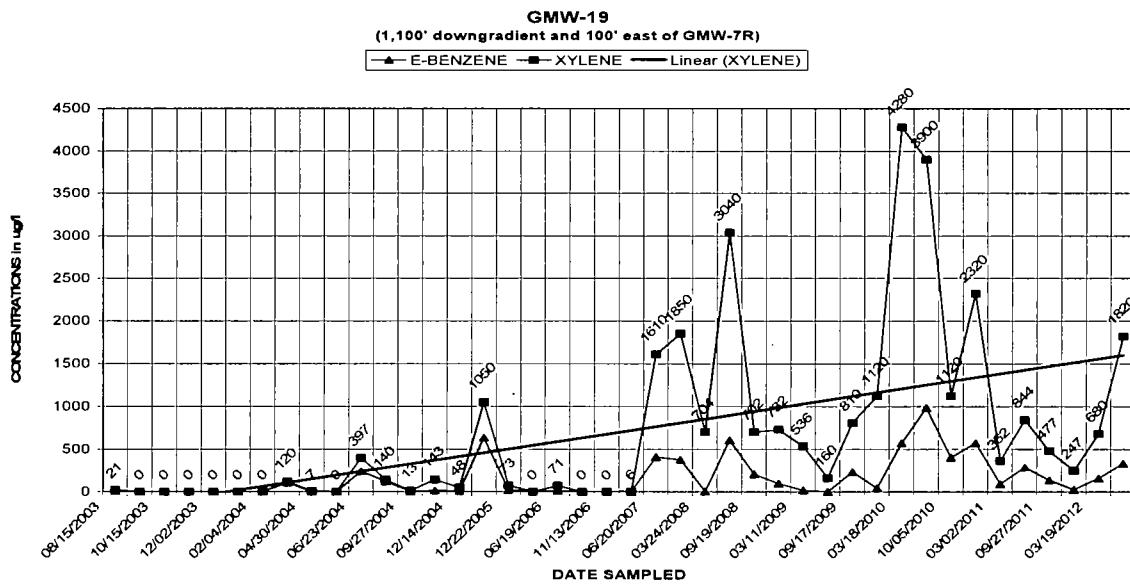
GMW-34

This well was installed in April 2006. It is located approximately 100' south and downgradient of RW-105. GMW-34 was installed to provide better definition of the eastern edge of the contaminant plume. The concentrations at GMW-34 were non-detect in the nine (9) samples taken prior to October 2010. Contamination was noted in October 2010, with concentrations apparently peaking in December 2010, then decreasing in March and June of 2011. BTEX concentrations were non-detect at GMW-34 for each of the 2012 monitoring events.



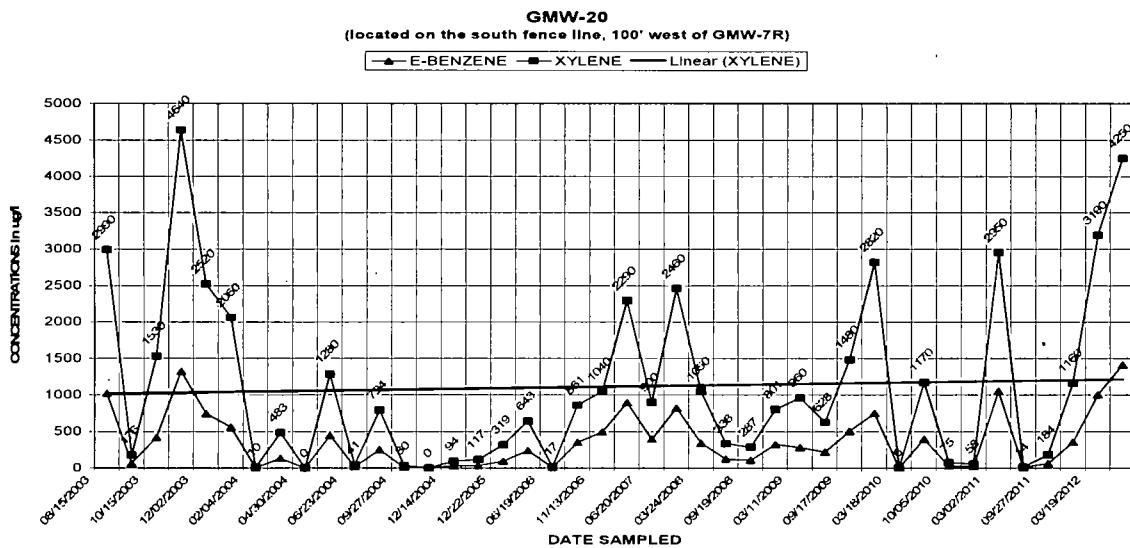
GMW-19

This well is located approximately 200' downgradient of GMW-34, on the southern boundary of the site. The overall trend in xylene concentrations at this well is upward. The highest xylene concentrations were noted in March and June of 2010. The contaminant concentrations then generally decreased through the end of 2011. The xylene concentrations increased slightly in 2012. The September 2012 xylene concentration was 1,820 ppb. The following graph illustrates the ethylbenzene and xylene concentrations over time for GMW-19.



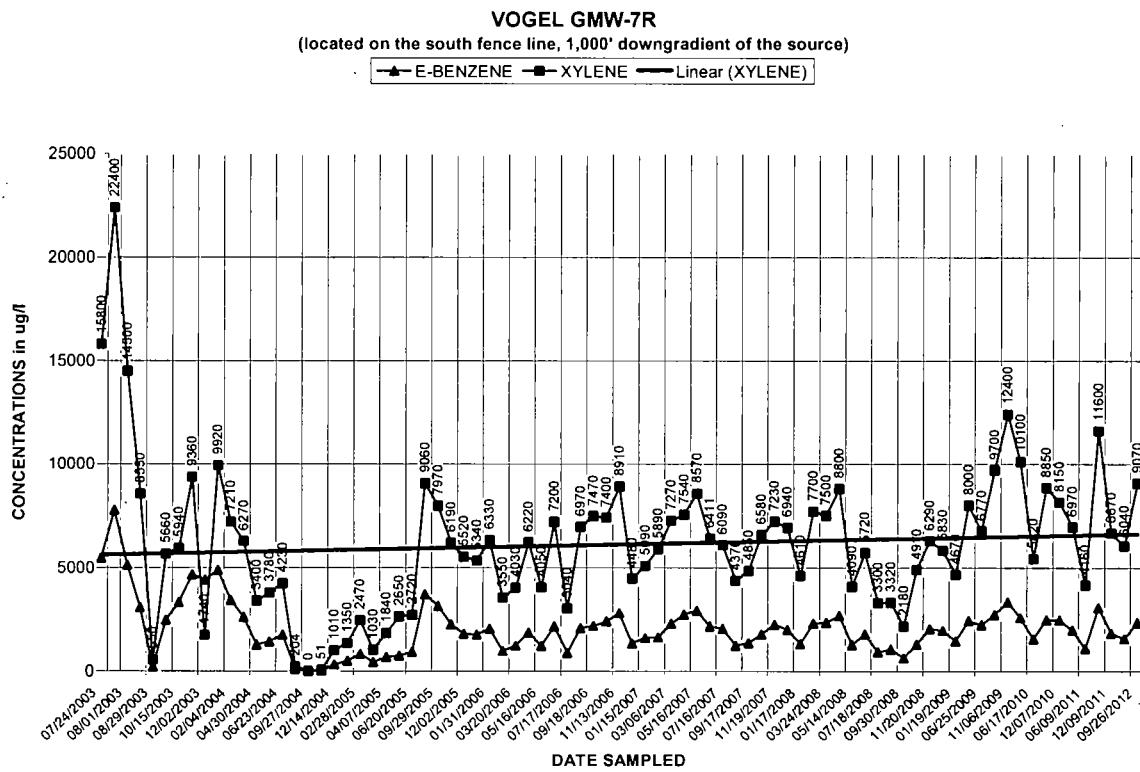
GMW-20

This well is located 100' downgradient of GMW-17 and 100' west of GMW-7R on the southern boundary of the site. The overall xylene and ethylbenzene trends are steady although fluctuations can be noted. The average xylene and ethylbenzene concentrations remain well below the MCL's at 1,168 ppb (10,000 ppb MCL) and 384 ppb (700 ppb MCL), respectively. The following is a graph of the analytical data for GMW-20.



GMW-7R

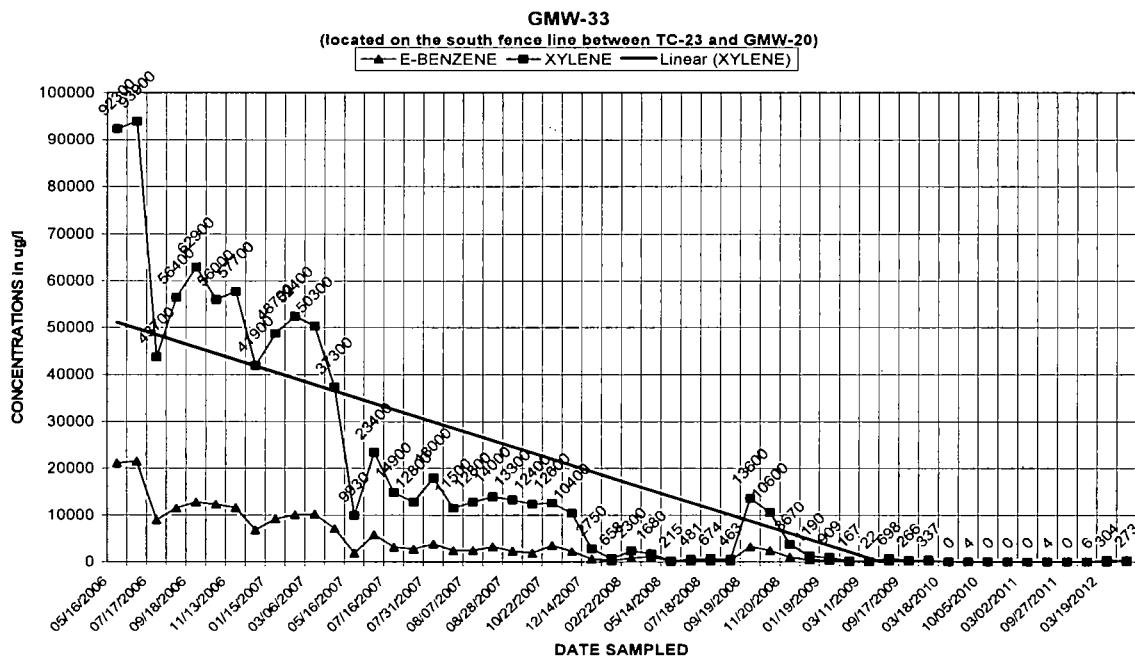
This well is located approximately 200' downgradient of GMW-34, between GMW-19 and GMW-20, on the southern boundary of the site. The concentrations in this well followed the same trends as observed in TC-6D, decreasing when the recovery wells were pumping and increasing after they were turned off in December 2004. The general concentration trend over time has been slightly upward. The average xylene and ethylbenzene concentrations in this well are 6,200 ppb (10,000 ppb MCL) and 2,100 ppb (700 ppb MCL), respectively. The September 2012 xylene concentration was 9,070 ppb. The following chart shows the xylene and ethylbenzene concentrations for GMW-7R over time and the xylene trend line.



GMW-33

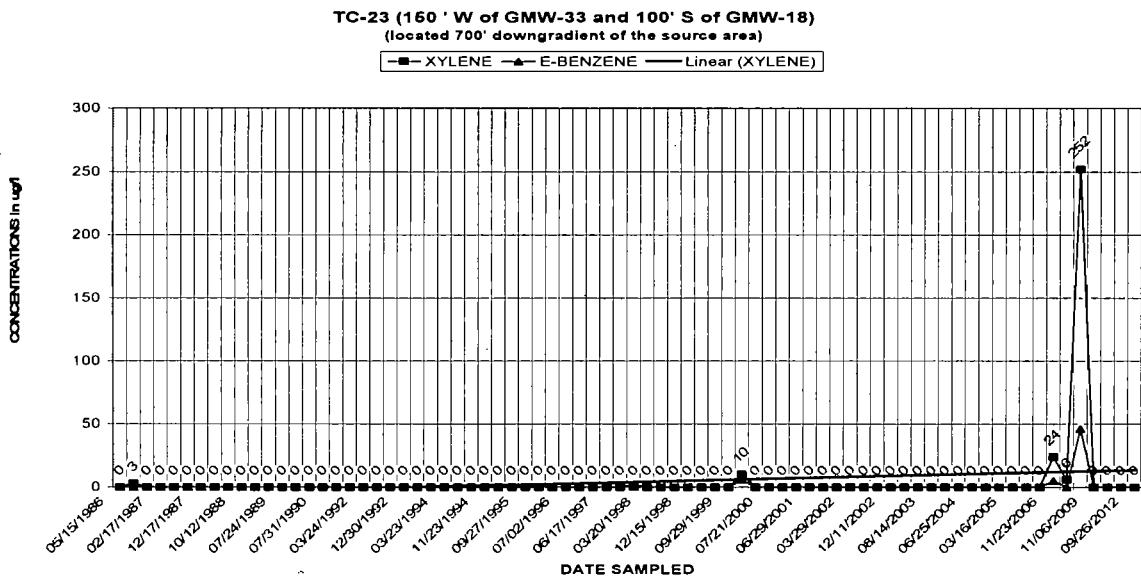
This well was installed in April 2006. It is located approximately 100' south and downgradient of GMW-17. GMW-33 was installed to monitor the groundwater concentrations between monitoring wells TC-23 and GMW-20, a distance of approximately 300'. GMW-33 was placed at this location because significant contamination had previously been detected approximately 200' further south in soil boring SB-4. There has been a significant downward trend in the concentrations at GMW-33.

On 9/19/08 the xylene concentration increased substantially to 13,600 ppb. The groundwater recovery pump in GMW-33 was damaged and had not operated from May through August 2008. The pump was replaced at the end of August 2008 and pumped through November 2008. The pumping may have caused upgradient contaminated groundwater to migrate toward the well causing the higher concentrations in September and October 2008. The concentrations decreased significantly when pumping was terminated. Since March 2010, xylene and ethylbenzene concentrations at GMW-33 have been low to non-detect. The following graph shows xylene and ethylbenzene concentrations at GMW-33 since sampling began.



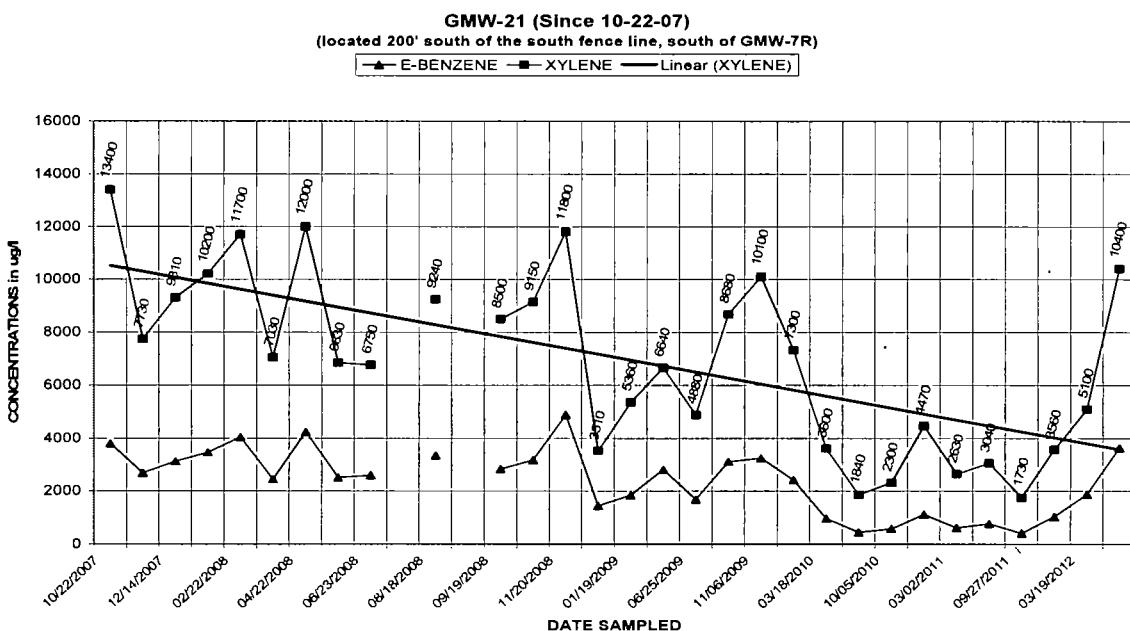
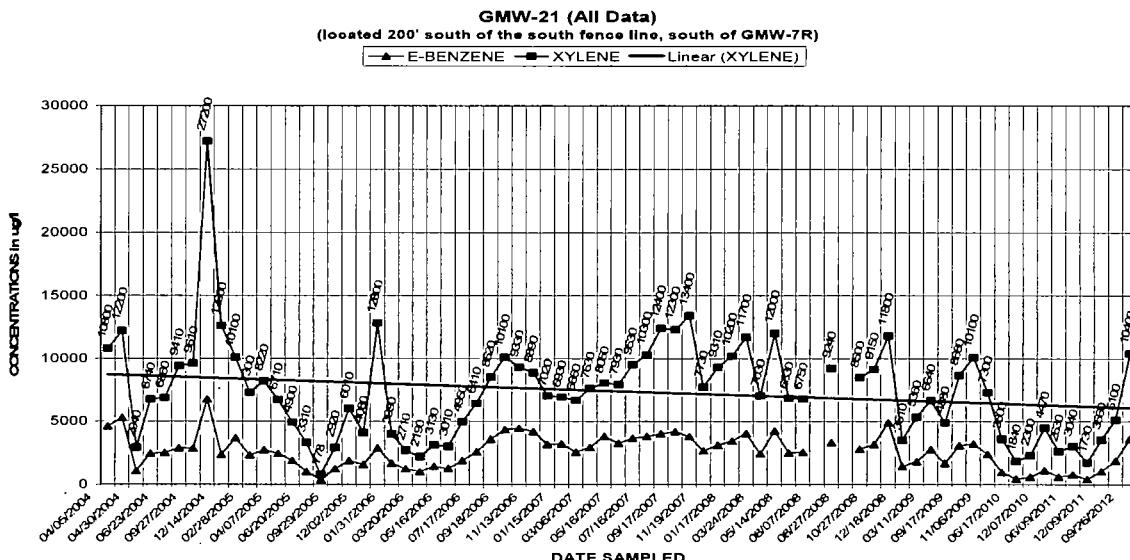
TC-23

This well was installed in 1986. It is on the west edge of the plume on the southern property line, approximately 150' west of GMW-33. The concentrations were at or near non-detect from 1986 to 2008. The xylene and ethylbenzene concentrations spiked in November 2008, although the concentrations were very low (252 ppb xylene and 46 ppb ethylbenzene) and well below MCL's. Contaminant concentrations have been non-detect the past 4 years (2009 through 2012). A graph of the xylene and ethylbenzene concentrations at TC-23 is provided below.



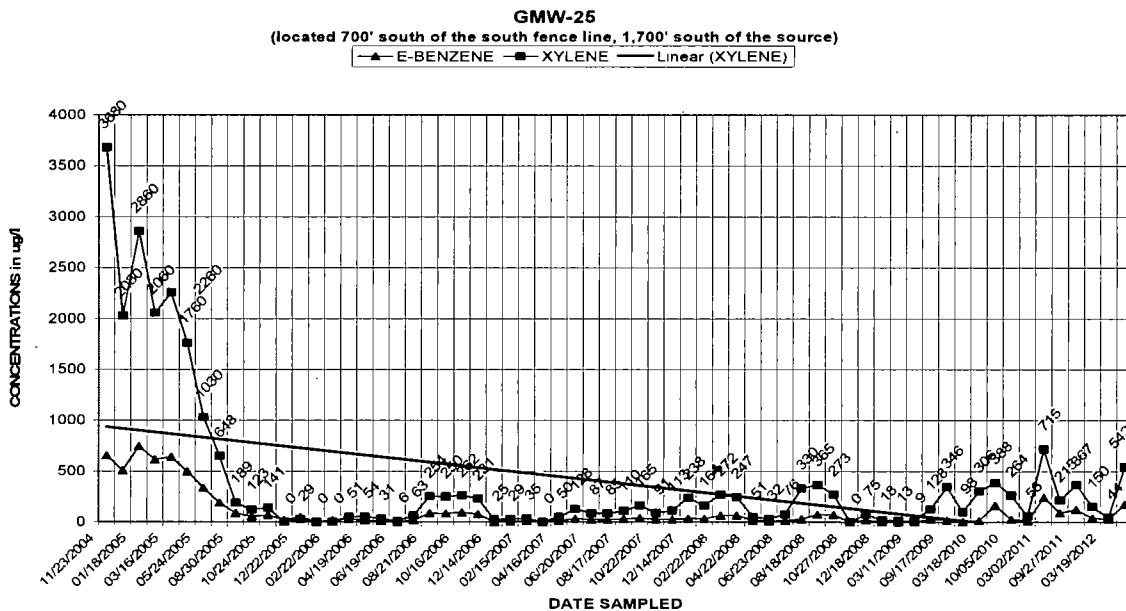
GMW-21

This well is located approximately 200' downgradient of GMW-7R. The long-term trend in xylene concentrations at GMW-21 has been downward. The average xylene and ethylbenzene concentrations in this well are 7,412 ppb (10,000 ppb MCL) and 2,622 ppb (700 ppb MCL), respectively. The xylene and ethylbenzene concentrations in September 2012 were 3,630 ppb and 10,400 ppb, respectively. The 10,400 ppb xylene concentration for September 2012 is slightly above the 10,000 ppb MCL. The MCL was last exceeded at GMW-21 in November 2009. The first graph below indicates the xylene and ethylbenzene concentrations at GMW-21 since its installation. The second graph illustrates these concentrations at GMW-21 since October 2007. A more significant downward trend is apparent in the second graph.



GMW-25

This well is the southernmost well with contamination. It is located approximately 1,700' downgradient of the disposal area and 700' south of GMW-7R (south property line). The concentrations at this location remain well below the limits. The xylene concentration was 542 ppb in September 2012. The following is a graph of the xylene and ethylbenzene concentrations at GMW-25.



Perimeter Wells (GMW-3, 8, 30, 34, TC-7, TC-23, MW-1 & MW-5)

Of the perimeter wells noted above, GMW-30, GMW-34 and TC-23 were discussed previously. The following perimeter wells were sampled in 2011 and had non-detect BTEX concentrations, comparable to historical sampling results: GMW-8, MW-1 and MW-5.

Detectable concentrations of benzene and xylene were noted at GWM-3 in September 2012. GMW-3 will be sampled again in March 2013 to further evaluate conditions at this location. Sampling of TC-7 in September 2011 and March 2012 had resulted in low groundwater BTEX concentrations. BTEX concentrations at TC-7 in September 2012 were non-detect. Sampling of TC-7 will be completed during the September 2013 monitoring event.

Private Wells

Two private dug wells, identified as the Bos and Niess wells, are sampled as part of the annual monitoring schedule. The Bos well is located approximately 600' southwest of MW-1 and the Niess well is located approximately 500' northwest of MW-1. Both wells are upgradient of the site. These wells have remained clean since the initial sampling in 1992. Similar to historical results, the September 2012 sampling of these wells resulted in non-detect BTEX concentrations. Water from these wells is not used for human consumption. The farm residences where these wells are located at, or near, are on rural water.

Heavy Metals Sampling (GMW-7R, 9R, 15 & TC-6D)

The Third Superfund Five-Year Review completed in 2009 contained several recommendations. Recommendation #4 stated the following: "Determine if the phytoremediation irrigation activities are mobilizing metals from the area where the treated soils were placed." Prior to this recommendation, groundwater samples from GMW-9R and TC-6D were being analyzed for metals. Wells GMW-7R and GMW-15 were added to the metals monitoring plan to comply with the recommendation.

On 9/26/12, field filtered water samples were taken from GMW-7R, GMW-9R, GMW-15 and TC-6D and were analyzed for the following heavy metals: arsenic, cadmium, chromium, lead, and mercury. Table 2 contains a summary of the groundwater heavy metal analyses. The laboratory analytical data is provided in Appendix A. Arsenic was present in each of the sampled wells. The 2012 arsenic concentrations were comparable to historic results for each of the wells. The arsenic concentration at the furthest downgradient well sampled for metals, GMW-7R, was less than the arsenic drinking water MCL of 0.01 mg/L (ppm). Lead was detected in the groundwater samples from GMW-7R, GMW-9R and GMW-15. The lead concentrations at these wells were less than the MCL. Lead was not detected in the groundwater sample from TC-6D. Cadmium, chromium, and mercury were non-detect in all sampled wells. The accumulated metals data for the site does not indicate significant downgradient migration of heavy metals.

Recovery Wells RW-102 & RW-104

Vogel's ceased operation of the groundwater recovery system and the air stripper tower in 2004 in order to evaluate the migration of the contamination plume under natural groundwater conditions. The groundwater recovery system using the air stripper tower has not operated during the past 8 years. However, recovery wells RW-102 and 104 were pumped in 2007 through 2009 to irrigate the phytoremediation trees from approximately June 1 through November 15 of each year.

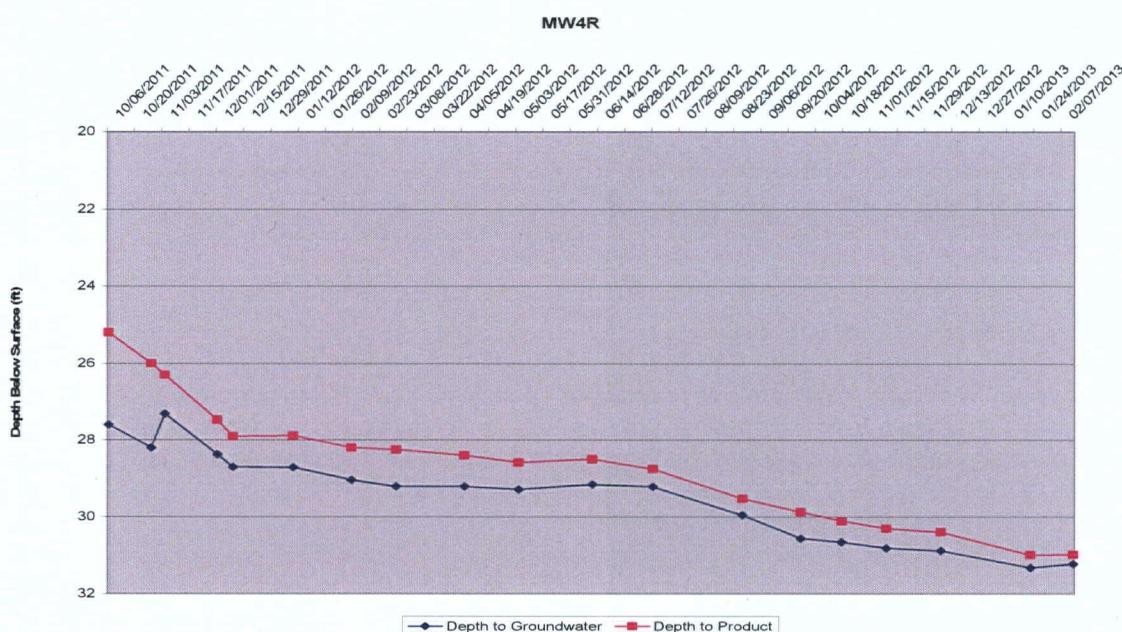
The average total BTEX concentrations detected in RW-102 and RW-104 in 2009 were 38 ppm and 48 ppm, respectively. The recovery wells were not pumped during 2010 through 2012.

4. Free Product Recovery Status

In September 2005 a Xitech® free product recovery system was installed in monitoring well MW-4R. The system was intended to operate continuously, removing free product that collects on the surface of the groundwater. The recovery rate in MW-4R has been negligible, indicating that a limited amount of recoverable product exists or that the water table is at depths that limit product removal. Very little free product had been recovered from this well since December 2005. The greatest thickness of product observed in 2012 was 0.96 feet on March 2. The product thickness on December 7, 2012 was 0.48 feet. The XiTech skimmer pump was removed from MW-4R in late 2011 and has not been re-installed. Monthly bailing of product was completed throughout 2012. The following table summarizes the approximate volumes of free product removed since recovery began in 1992.

Method of Removal	Phase of Product Removal	Gallons
Soil Remediation 1992 – 1998	Sludge and solvents removed	5,500
Soil Remediation 1992 – 1998	Soil remediation	71,000
Free Product Plume Excavation 2000	Repositioned soils volatization	31,000
Water Treatment Plant	Aqueous phase product	13,000
Water Treatment Plant	Free product	15,800
Xitech® recovered free product	Free Product 2005/2006	15
Phytoremediation Irrigation Water	Aqueous phase product 2007	40
Phytoremediation Irrigation Water	Aqueous phase product 2008	87
Xitech® recovered free product	Free Product 2008	11
Phytoremediation Irrigation Water	Aqueous phase product 2009	68
Xitech® recovered free product	Free Product 2010	3
Xitech® recovered free product	Free Product 2011	4
Monthly Hand Bailing	Free Product 2012	3
	Total	136,520

The groundwater table dropped throughout most of 2012. The lower water table has resulted in less free product being noted at MW-4R. The graph below illustrates product and water levels over approximately the past year and a half.



5. Stream Sampling

Stream sampling was not completed in 2012. The following comments were included in the Iowa Department of Natural Resources (IDNR) April 25, 2012 letter regarding the 2011 Annual Groundwater Monitoring Report: "...the stream sampling conducted in response to a recommendation in the 2009 Superfund Five-Year Review has sufficiently demonstrated no adverse impact on the stream from the Vogel site. Therefore, stream sampling may be discontinued."

6. Evaluation of Short-term Irrigation Pumping & Treatment vs. Long-term Phytoremediation

In mid-May 2007 phytoremediation trees were planted and an irrigation system was placed in operation at the end of July 2007. The 2007 phytoremediation system consists of 1-acre of trees planted 8' apart in 23 rows alternately spaced 8' and 10' apart. Five hundred (500) poplar trees [Imperial Carolina poplar (*Populus X canadensis Moench*)] (12" to 18" seedlings) and 250 willow trees [*Salix Lutea Nutt.*] (12" to 20" seedlings) were planted. An irrigation system consisting of 30 sprinkler heads [5 gallons per minute (gpm) head capacity] was installed to irrigate the trees. The irrigation water was pumped from monitoring well GMW-33 and recovery well RW-104 (for more information on the phytoremediation system see the April 2010 "Summary Report on the 2009 Expansion of Short-term Pumping and Treatment by Irrigation with Potential Long-term Phytoremediation"). In May 2008, an additional 1,800 trees were planted on 2.5 acres north of the 2007 planting.

Well Pumping and Irrigation Rates

Recovery wells RW-102 and RW-104 were not pumped during 2012. Passive remediation, phytoremediation and monitored natural attenuation (MNA) have been occurring since the end of the irrigation season in November 2009.

Remediation Monitoring

Monitoring of this remediation method included: 1) the volume and concentrations of the water pumped from GMW-33, RW-104 and RW-102; 2) groundwater sampling below the phytoremediation system; 3) air emissions during irrigation; 4) precipitation monitoring; 5) continuation of the current groundwater monitoring program; 6) monitored natural attenuation (MNA) and 7) groundwater sampling at the former SB-4 borehole location when documenting success of remediation.

Since the recovery wells were not pumped in 2012, the irrigation monitoring listed under items 1, 2, 3, and 7 in the above paragraph were not conducted in 2012.

Precipitation Monitoring

Excessive amounts of precipitation could result in saturated soil conditions and runoff. Runoff from the phytoremediation system does not leave the site. The site is graded so runoff will flow north and remain on site above existing contaminated areas. Under extreme flooding conditions, the runoff would flow into a holding pond and not leave the site. It is highly unlikely that runoff from the phytoremediation site will reach the north holding pond located approximately 1,000' downgradient. Since there was no irrigation in 2012, monitoring of runoff from the site was not completed.

The following is a summary of the approximate precipitation received during 2012 based on measurements made in Sioux County, Iowa.

Month	Precipitation in inches
Apr	2.83
May	7.73
June	0.41
July	0.74
Aug	2.48
Sept	0.45
Oct	1.73
Nov	0.55
Total	16.92

The amount of precipitation that the site received was monitored closely and compared to historical averages. If the precipitation exceeded the average rainfall for the site, the site was inspected to determine if saturated soil conditions were occurring. From April through November 2012, the area received rainfall comparable to 2011. Precipitation amounts in 2011 and 2012 were approximately 10 to 11" less than in 2010.

Phytoremediation Tree Survival Rate

Five hundred poplar trees [Imperial Carolina poplar (*Populus X canadensis Moench*)] (12" to 18" seedlings) and 250 willow trees [*Salix Lutea Nutt.*] (12" seedlings) were planted in 2007 on the RW-104 system irrigated area. The willow trees, which are more moisture tolerant, were planted on the southern third of the site where water routinely ponds at the surface. In 2008 an additional 1,800 Imperial Carolina poplars were planted on the area initially irrigated by RW-102.

The survival rate for the entire site (2,500 trees) was approximately 97% at the end of the 2008 growing season. The survival rate in 2009 dropped to approximately 94% during the winter from damage caused by deer, rabbits, mice and voles. Dead trees were replaced in April 2010. Very few trees were lost in 2011. A number of trees were lost in 2012, primarily due to the lack of rainfall during the growing season. Since the replacement of trees in 2010, the survival rate for the entire site is approximately 95%, through the end of the 2012 growing season.

Phytoremediation Tree Growth Rate

According to the US Soil Conservation Service, the average annual growth rate for the poplar tree Imperial Carolina is 1.2 meters (3.9') under normal growing conditions and average soil conditions. Based on measurements taken in September 2012, the average growth rate of the poplar trees planted in 2007 has been approximately 4' per year. The average height of the trees planted in 2007 is approximately 23 feet. The average diameter of these trees, at approximately 5' above ground, was about 4.5" to 5" in September 2012.

The average growth rate of the poplar trees planted in 2008 is also approximately 4' per year, with an average height of approximately 20' noted in September 2012. The average diameter of the trees planted in 2008, at approximately 5' above ground, was about 2.5" to 3" in September 2012.

Despite some tree loss in 2012, the trees in general appear to be healthy and growing well. The trees are generally mature enough that additional irrigation is not anticipated to be necessary. Consideration will be given to planting replacement trees in 2013. Photos illustrating tree growth from 2011 to 2012 are included in Appendix B, along with aerial photos from 2007 through 2011.

The phytoremediation system trees will "pump" a substantial amount of groundwater upon their maturity. The phytoremediation trees are expected to uptake groundwater only from the shallow aquifer. The shallow and deep aquifers merge into one aquifer in the northern portion of the site. Natural groundwater

flow is to the north in the shallow aquifer to the areas where the upper and lower aquifers merge near monitoring well GMW-13. At this point the shallow aquifer terminates into the deep aquifer which flows to the south/southeast.

The migration of contaminants in the deep aquifer to the south is where the off-site contamination has occurred. Once the trees are fully established, the mature trees are projected to pump at a rate of 25 to 50 gallons per day per tree. The total daily pump rate would be approximately 62,500 gpd to 125,000 gpd. (2,500 trees x 25 gpd = 62,500 gpd and 2,500 trees x 50 gpd = 125,000 gpd). This would be a seasonal effect; 6 months per year, during the major recharge period. This withdrawal rate is comparable to the combined recovery rate (0.121 million gallons per day) of recovery wells RW-102 and RW-103 when they were pumping. The recovery wells operated seasonally and their pumping influenced the off-site groundwater gradient. The average removal of 60,000 to 125,000 gpd (11 million to 22 million gallons per year) from the shallow aquifer by the trees would reduce recharge to the deep aquifer, in turn potentially decreasing off-site migration.

Tree Tissue Analyses

The 2009 EPA five-year review concludes that the remedy at Vogel site is protective of human health and the environment in the short-term because there is no evidence of current exposure. However, in order for the remedy to be protective in the long-term, several actions were recommended. One action was to evaluate risks associated with the potential uptake and accumulation of contaminants of concern (BTEX and heavy metals - arsenic, cadmium, chromium and mercury) in phytoremediation trees planted over the area where treated soils were placed during remediation activities. Tree tissue sampling will be completed in 2013, so results are available for review prior to the next EPA Five Year Review in 2014.

Tree core samples will be collected using a 10" HAGLÖF increment borer. Each core sample will be collected from a height of approximately 1.5 m (chest height) above ground. A core of the outermost 3 inches (not including the bark) is sufficient to identify the contaminants.

Metals Analysis: Tree cores will be collected from approximately 32 trees, from eight areas across the site. Eight composite samples, made up of core samples from 4 trees each, will be submitted for analysis. Cores from four trees (composite) will be placed in laboratory provided 40-milliliter (ml) headspace vials sealed with Teflon-faced butyl caps. Laboratory analysis summarized as follows: 1) the composite core samples are homogenized, 2) the homogenized samples are digested using aliquots of nitric acid and hydrogen peroxide, 3) the digests are analyzed for metals by inductively coupled plasma dynamic reaction cell mass spectrometry (ICP-DRC-MS).

BTEX Analysis: Tree cores will be collected from approximately 10 trees, randomly selected across the site. Each tree core samples will be immediately placed in laboratory provided 20 ml PTFE-capped sample vials. The vial headspace will be analyzed via Solid-phase Microextraction (SPME).

Monitored Natural Attenuation Evaluation

The 2008 Phytoremediation Evaluation Report contained a proposal to use monitored natural attenuation (MNA) as a possible remediation method for the off site contamination. Based on EPA's guidance, MNA would likely be an acceptable remediation strategy for the off-site contamination because of the following factors: 1) There is significant scientific research that indicates the VOC contaminants such as those at the Vogel site can be effectively addressed by natural attenuation processes; 2) The plume is relatively stable and not likely to experience significant migration; 3) The potential for unacceptable risks to human health or environmental resources from the identified contamination appears low; and 4) There is significant evidence that the contamination plume is no longer increasing in extent and is likely shrinking. There are primary and secondary lines of evidence that can be used to document that MNA is occurring.

Primary Lines of Evidence that Natural Attenuation is Occurring

The primary line of evidence for natural attenuation is to document decreasing trends in contaminant concentrations. The following is a discussion of concentration trends observed in the southern property line monitoring wells and the downgradient off-site monitoring wells.

GMW-7R is located on the south property line. The contaminant concentration trend in this well has been stable to slightly upward. The average xylene and ethylbenzene concentrations in this well are 6,200 ppb (10,000 ppb limit) and 2,100 ppb (700 ppb limit), respectively. (See graph of GMW-7R in Section 3 above)

GMW-19 is located approximately 100' east of GMW-7R, on the southern boundary of the site. Increased contaminant concentrations were noted at GMW-19 in March and June of 2010, with concentrations generally decreasing since that time. The average xylene and ethylbenzene concentrations in this well remain low at 919 ppb (10,000 ppb limit) and 232 ppb (700 ppb limit), respectively. The xylene concentration at GMW-19 was 1,820 ppb in September 2012. (See graph of GMW-19 in Section 3 above)

GMW-20 is located 100' west of GMW-7R on the south property line. The overall xylene and ethylbenzene trends are stable to slightly upward, with both xylene and ethylbenzene concentrations remaining well below the limits. The average xylene and ethylbenzene concentrations remain below the limits at 1,168 ppb (10,000 ppb limit) and 384 ppb (700 ppb limit), respectively. (See graph of GMW-20 in Section 3 above)

GMW-33 was installed in April 2006 on the south property line. It was installed to monitor the groundwater concentrations between monitoring wells TC-23 and GMW-20, a distance of approximately 300'. GMW-33 was placed at this location because significant contamination had previously been detected approximately 200' further south in soil boring SB-4. There has been a significant downward trend in the concentrations in this well. The average xylene concentration in this well decreased from 51,916 ppb, May 2006 thru June 2007, to 5,272 ppb after June of 2007. The average xylene concentration for 2009 through 2011 is 272 ppb. On 09/26/12, the xylene concentration was 273 ppb (10,000 ppb limit) and the ethylbenzene was 61 ppb (700 ppb limit). (See graph of GMW-33 in Section 3 above)

GMW-21 is located approximately 200' downgradient of GMW-7R and the south property line. The contamination trend in this well since October 2007 has been downward. (See graph of GMW-21 in Section 3 above). The September 2012 xylene concentration at GMW-21 was slightly above the 10,000 ppb MCL. The MCL was last exceeded at GMW-21 in November 2009. The increased concentrations at GMW-21, and at a number of other wells, in September 2012 may be the result of a much lower water table than in recent years.

GMW-25 is the southernmost well with contamination. It is located approximately 1,700' downgradient of the disposal area and 700' south of GMW-7R (south property line). The concentrations at this location remain well below the limits. The concentrations have trended downward significantly since the initial sampling event in November 2004. The xylene concentration at GMW-25 in September 2012 was 542 ppb. (See graph of GMW-25 in Section 3 above)

GMW-30 is located approximately 2,000' downgradient of the source and 900' south of GMW-7R (south property line). It is the furthest downgradient well. Low concentrations of xylene were detected in this well from February through May 2005. The xylene concentration at GMW-30 has generally been non-detect since May 2005. The xylene concentration in September 2012 was 3.21 ppb, slightly above the laboratory method detection limit. (See graph of GMW-30 in Section 3 above)

Secondary Lines of Evidence that Natural Attenuation is Occurring

Secondary lines of evidence that MNA is occurring can be obtained by monitoring of geochemical indicators of natural biodegradation processes. Monitoring was conducted during three events in 2009 and three events in 2010 to document that MNA was occurring at the site. This monitoring included samples from: up-gradient or side-gradient wells outside the plume (MW-1 and MW-5); wells within the plume (GMW-7R, GMW-9R, GMW-21 & GMW-25); and a downgradient "sentinel" well (clean) located outside but directly downgradient of the plume, that is capable of detecting further migration of the contamination (GMW-30). The 2012 monitoring activities for natural attenuation were completed in July.

The geochemical indicators used to measure the natural attenuation of petroleum compounds in groundwater monitoring wells included: dissolved oxygen (DO), pH, eH redox (oxidation reduction potential {ORP}), nitrate (NO₃), sulfate (SO₄), and soluble (ferrous) iron (Fe II). Field analysis for these parameters was conducted during each sampling event.

The following field analysis methods and equipment were utilized during each sampling event: YSI 556 Multi-Parameter Probe for pH, DO, redox, and specific conductivity and a Hach DR/2010 spectrophotometer for nitrates, sulfates, iron, and manganese. MNA data for 2011 and 2012 is summarized in the following tables. Table 3 provides MNA data and results for 2009 through 2010.

MNA analytical results for 6/02/11

Well	BTEX mg/l	pH	Redox EV	DO mg/l	Nitrate mg/l	Sulfate mg/l	Fe (II) mg/l	Methane ug/l
Wells within the plume								
GMW-7R	5,290	7.61	50.1	6.29	0	18	1.14	na
GMW-9R	44,140	7.77	59.0	14.09	3.4	19	8.3	na
GMW-13	99,780	7.48	10.5	6.51	0	1	4.6	na
GMW-21	3,860	7.25	43.6	10.65	0	67	2.11	na
GMW-25	307	7.28	38.8	14.60	0	140	0.37	na
Sentinel Well (farthest downgradient well)								
GMW-30	ND	7.45	50.0	11.58	0	26	0.46	na
No detectable Hydrocarbons (up gradient and side gradient wells)								
MW-1	ND	7.75	39.9	17.25	0.6	700	0.05	na
MW-5	ND	7.51	56.6	16.63	0.4	700	0.08	na

ND = non-detected; na = not analyzed

MNA analytical results for 7/24/12

Well	BTEX mg/l	pH	Redox EV	DO mg/l	Nitrate mg/l	Sulfate mg/l	Fe (II) mg/l	Methane ug/l
Wells within the plume								
GMW-7R	13,500	6.80	-142	3.10	0	9	0.94	120
GMW-9R	97,000	6.93	-102	3.31	2.0	0	10	550
GMW-13	123,400	6.72	-12.9	4.08	0	0	2.4	870
GMW-21	13,760	7.01	-275	6.95	0	55	2.54	130
GMW-25	26	6.95	242	8.73	0	700	1.06	1.9
Sentinel Well (farthest downgradient well)								
GMW-30	ND	6.99	230	2.51	0	13	1.65	130
No detectable Hydrocarbons (up gradient and side gradient wells)								
MW-1	ND	6.94	250	10.03	0.8	700	0.29	<0.58
MW-5	ND	7.03	-85.3	8.31	0.9	26	0.05	<0.58

ND = non-detected; na = not analyzed

The 2012 MNA results generally indicate that natural biodegradation continues to take place. Several of the monitored geochemical parameters demonstrated the occurrence of natural biodegradation.

The pH values measured for the 2012 MNA monitoring event varied little from well to well. The pH levels are in the neutral range, therefore they do not adversely impact natural biodegradation.

The Redox (ORP) results for 2012 generally indicate lower levels in the most contaminated wells versus those noted in the less contaminated wells. The average ORP reading for the contaminated wells (GMW-7R, 9R, 12 and 21) was -133 ev and the average ORP reading for the cleaner wells (GMW-25, 30, MW1 and MW5) was +159 ev. Theoretically, aerobic degradation activity occurs at a highly positive redox potential, while anaerobic microbial processes such as nitrate and sulfate reduction will occur at strongly negative redox potentials.

The DO results for 2012 indicate that aerobic biodegradation is occurring. Based on literature, approximately 1 to 2 mg/L DO is needed to sustain aerobic biodegradation. Measured DO concentrations at the site ranged from 2.51 to 10.03 mg/L. The average DO concentration in the contaminated wells was 4.36 mg/L while the average DO in the cleaner wells was 7.40 mg/L.

With the exception of GMW-9R, MW-1 and MW-5, nitrate was not detected in the monitoring wells. The 2012 nitrate results are comparable to 2011. Also similar to 2011, lower sulfate concentrations were noted in the more contaminated wells in 2012 as compared to the less contaminated wells. Decreased nitrate and sulfate concentrations in the anaerobic (more contaminated) portion of the plume indicate use of nitrate and sulfate as electron acceptors for anaerobic biodegradation of petroleum hydrocarbons. The average sulfate concentration in the contaminated wells (GMW-7R, 9R, 13, and 21) was 16 mg/L and the average sulfate concentration in the cleaner wells (GMW-25, 30, and MW-1 and 5) was 360 mg/L.

Comparable to 2009 through 2011 results, the iron (Fe II) concentrations for 2012 demonstrated the most consistent evidence that biodegradation was occurring. The average iron concentration in the contaminated wells (GMW-7R, 9R, 13, and 21) was 3.97 mg/L and the average detected in the cleaner wells (GMW-25, 30, and MW-1 and 5) was 0.076 mg/L. Higher concentrations of iron (Fe II) indicate that iron (Fe III) is being used as an electron acceptor during anaerobic biodegradation of petroleum hydrocarbons.

7. Mass Flux/Mass Discharge Evaluation

At the suggestion of the IDNR, evaluation of the contamination at the Vogel site was completed using mass flux and mass discharge calculations/estimates. Mass discharge and flux estimates quantify source or plume strength at a given time or location ("Use and Measurement of Mass Flux and Mass Discharge," Interstate Technology & Regulatory Council (ITRC), August 2010). The August 2010 ITRC document was used as guidance for the calculations and discussions provided below.

Mass flux is a rate measurement specific to a defined area, which is usually a subset of a plume cross section. Based on the September 26, 2012 contaminant concentrations, mass flux (J) was calculated at a number of monitoring wells using the following equation:

$$J = K i C$$

where K = saturated hydraulic conductivity, L/t , (e.g., m/d)
 i = hydraulic gradient, dimensionless (e.g., m/m or ft/ft)
 C = contaminant concentration, M/L^3 (e.g., mg/volume)

Based on previous testing at the Vogel site, the K value utilized for mass flux/mass discharge calculations was 163 m/day (4,000 gal/day-ft²). This appeared to be the highest estimated K value for the site. Use of a higher K value (higher groundwater velocity) results in a more conservative estimate of mass flux and mass discharge. The groundwater gradient used for calculations was 0.002. The K value and gradient were constants, with the contaminant concentration being the only variable in the mass flux calculations.

The primary constituents of concern at the site have been ethylbenzene and xylenes. Mass flux estimates for ethylbenzene and xylenes at selected wells are indicated below. The monitoring wells selected were designed to provide a number of transects across the site, where mass discharge could be estimated and compared from transect to transect. This is discussed further below. Refer to Figure 9 for the transect locations.

Transect A	Ethylbenzene	Xylenes
TC22	0.0003	0.0010
TC6	4.857	17.669
TC5	0.0003	0.0010

Transect B		
GMW16	0.165	0.482
GMW15	2.142	7.498
GMW34	0.0003	0.0010

Transect C		
TC23	0.0003	0.0010
GMW33	0.020	0.089
GMW20	0.460	1.386
GMW7R	0.773	2.957
GMW19	0.108	0.593
MW5	0.0003	0.0010

Transect D		
GMW27	0.003	0.0010
GMW21	1.183	3.390
GMW23	0.0003	0.0010

NOTE:
All mass flux values
are in units of g/d/m²

Mass discharge (g/d) across each transect was calculated by averaging the mass flux for adjacent monitoring wells and then estimating the area between the two points. The distance between the wells was measured from the scaled site map. The aquifer thickness was estimated to be 5 m (approximately 15 feet) at each point. The sum of the mass discharge values between each well provides the total mass discharge for each transect, as noted below.

	Ethylbenzene	Xylenes
Transect A	2,041 g/d	7,422 g/d
Transect B	500 g/d	1,743 g/d
Transect C	228 g/d	845 g/d
Transect D	477 g/d	1,365 g/d
Transect E	18 g/d	54 g/d

A comparison of the mass discharge values indicates that they generally decrease moving in a downgradient direction. The one exception is Transect D, just off site, which has higher mass discharge values than Transect C (along the south property line of the Vogel site). As noted previously, the contaminant concentrations at GMW21 in September 2012 were slightly higher than previous results.

It should be noted that the most applicable transect for estimating mass discharge is Transect C, which has multiple sampling points (monitoring wells). Transects A, D and E are dominated by one sampling point, therefore, the mass discharge calculations are potentially subject to greater error.

The general decrease in mass discharge values from the source area to the south further indicates that natural attenuation is occurring and that monitored natural attenuation (MNA) is an appropriate alternative for site at this time. The mass flux and mass discharge calculations can be influenced by the number of data points along each transect and by the estimated thickness of the aquifer/saturated zone. As noted above, the aquifer thickness at each of the wells was assumed to be 5 m (15 feet), but this may vary at individual wells or at times of high or low water tables.

Water supply wells are not present immediately downgradient of the Vogel site. As noted previously, water supply wells associated with the Southern Sioux Rural Water System are located at least 1.5 miles from the contaminant plume. Risk related to the contamination at the Vogel site, as related to potential water supply well receptors, can be evaluated using the mass discharge values above. As noted in the 2010 ITRC document, Einarson and Mackay (2001) proposed a method for using mass discharge to estimate the resulting concentration in water produced from a well near a contaminant plume. The equation to be used is as follows:

$$C_{sw} = M_d / Q_{sw}$$

where C_{sw} = contaminant concentration in water extracted from the supply well, M/L^3 (e.g., mg/L)
 M_d = mass discharge of plume located near edge of water supply well capture zone, M/t (e.g., g/d)
 Q_{sw} = pumping rate of supply well, L^3/t (e.g., L/d)

Calculations were completed using the above equation and the mass discharge values for ethylbenzene and xylenes for Transect C (south property line). Two water supply well scenarios were evaluated, first with a pumping rate of 100 gallons per minute (gpm) and then with a pumping rate of 10 gpm. The water supply wells are assumed to be downgradient of the south property line and within the contamination plume. The wells could be assumed to be downgradient of GWM-7R, in the vicinity of GMW-21.

After completing the calculations and necessary conversions, the resulting concentrations were estimated for the water supply wells:

100 gpm well: Ethylbenzene, 418 ug/L and Xylenes, 1,550 ug/L

10 gpm well: Ethylbenzene, 4,180 ug/L and Xylenes, 15,503 ug/L

It can be noted that the second scenario, a well with a relatively low pumping rate, similar to a private domestic well, could potentially draw in enough contamination to produce water with concentrations above the MCLs for ethylbenzene and xylenes. The first scenario, a well with a higher pumping rate, would not result in water with concentrations above the MCL. As noted previously, these examples assume the water supply well is located just south of the south property line and the contaminant plume is within the well capture zone.

The above scenarios and calculations are provided for evaluation purposes and to indicate that risks associated with the identified contamination are relatively minimal. The land to the south of the Vogel's site is prime agricultural land used for row crops such as corn and soybeans. It appears unlikely that development of the land for purposes other than row crops would occur. At this time, it also appears unlikely that a water supply well would be installed in the area immediately downgradient of the Vogel's site.

8. Groundwater Modeling

The IDNR Leaking Underground Storage Tank (LUST) Section developed a computer model to evaluate petroleum contamination sites using a Risk Based Corrective Action (RBCA) approach. The Tier 2 RBCA software uses fate and transport models to predict the maximum distance groundwater contamination is expected to migrate and the distribution of concentrations of chemicals of concern within the anticipated plume. The simulated contaminant plumes are based on varying target levels for different receptors.

In GeoTek's experience, based on using the IDNR Tier 2 RBCA model for the past approximately 17 years at hundreds of sites with petroleum contamination, the simulated contaminant plumes that result from the model are generally very conservative in estimating migration of contaminants. The groundwater portion of the Tier 2 model was used to evaluate the BTEX groundwater contamination associated with Vogel's and risk to potential receptors. For the Vogel site, the most applicable receptors to evaluate would be drinking water wells, non-drinking water wells, or protected groundwater source (as defined by IDNR rules).

A significant amount of BTEX groundwater data is available for the monitoring wells at the Vogel site. BTEX groundwater data was reviewed and entered into the Tier 2 computer model such that the highest concentrations of BTEX for each well were utilized by the model for plume estimation. Output from the Tier 2 model is provided in Appendix C and discussed further below.

Page 4 of the Tier 2 computer model output (Tier 2 Data Before Modeling) in Appendix C provides the BTEX source concentrations for the site and page 5 summarizes the site hydrogeology used for the modeling. The hydraulic conductivity and gradient values used previously for the mass flux/mass discharge calculations were also used for the Tier 2 computer modeling. Tier 2 model guidance recommends that a "range of plume/flow" of 150° be used if the groundwater gradient is less than 0.005.

The simulated plumes for drinking water well (DWW) and protected groundwater source (PGWS) receptors were plotted on the site map and are included in Appendix C. The corrective action target levels for DWW receptors are the MCLs for BTEX (i.e. benzene – 5 ppb, toluene – 1,000 ppb, ethylbenzene – 700 ppb, and xylene – 10,000 ppb). The target levels for PGWS receptors are equal to those for non-drinking water well (NDWW) receptors and are as follows: benzene – 290 ppb, toluene – 7,300 ppb, ethylbenzene – 3,700 ppb and xylene – 73,000 ppb.

It can be noted that the simulated contaminant plumes for DWW receptors generally do not extend a significant distance outside of the actual contaminant plumes for the site. Based on the Tier 2 computer model, BTEX contamination at concentrations greater than MCL's is not predicted to migrate beyond the existing monitoring well network.

9. Plume Stability Evaluation

To further demonstrate the applicability of natural attenuation as the remedial alternative for the Vogel site, plume stability was evaluated using the general method presented by Ricker (J.A. Ricker, Groundwater Monitoring & Remediation 28, no. 4/Fall 2008/pages 85-94). Yearly average xylene concentrations were determined for the past 4 years (2009 through 2012). The past 4 years were chosen for comparison since active remediation has not occurred at the site since the end of the irrigation season in November 2009.

Xylene concentration isopleth maps were developed using Surfer® by Golden Software and calculations were completed similar to those done by Ricker. The isopleth maps were generated to show the area(s) with xylene concentrations exceeding the MCL (10,000 ug/L). The isopleth maps are provided in Appendix D.

The calculated plume area, average concentration, and mass for each year are provided in the table below. It can be noted that the calculated values for each year are comparable, indicating a relatively stable plume over the past 4 years.

Year	Area (ft ²)	Average Xylene Concentration (ug/L)	Mass (kg)
2009	156,551	27,434	547
2010	178,570	24,968	568
2011	173,170	25,079	553
2012	169,209	26,500	571

Equations and assumptions used in completing the calculations are included in Appendix D. Groundwater sampling was completed quarterly in 2009 through 2011 and semi-annually in 2012. As noted previously in this report, the water table was much higher in 2010 and 2011 than in 2012. Some fluctuations in the contaminant concentrations at individual wells can be expected with drops and/or rises of the water table.

10. Conclusions

In general, the BTEX groundwater contamination plumes at the project site appear to be stable. The extent of contamination, as indicated on the 2012 contamination plume maps (Figures 4 through 7) is comparable to recent years. Increases in contaminant concentrations, as compared to recent results, were noted at several wells in September 2012, but concentrations remained below historical highs. Slight upward trends in the xylene concentration are noted at GMW7R, GMW19 and GMW20, however the concentrations remain below the MCL.

This report includes additional evaluation of natural attenuation at the site. The additional evaluation was completed utilizing mass flux/mass discharge calculations and plume stability. The evaluation results, combined with the data from the monitored natural attenuation (MNA) sampling event, indicate natural attenuation is occurring at the site.

The recovery wells and water treatment plant (WTP) have been off line for 8 years. Xylene concentrations in source wells GMW-9R and GMW-13 show steady to slightly decreasing trends over time. At TC-6D, an increasing trend is apparent since 2001, however, the xylene concentration for the past 4 years has been steady. Ending the operation of the recovery wells and WTP in 2004 has not resulted in expansion of the contaminant plume.

The completed groundwater modeling (Tier 2 RBCA model) indicates that risks associated with the BTEX contamination are limited to the immediate area of identified contamination. The nearest public water supply wells, those associated with the Southern Sioux Rural Water System, are located at least 1.5 miles from the Vogel site. These public water supply wells appear extremely unlikely to be impacted by the BTEX groundwater contamination at Vogel's, as evidenced by the accumulated data and evaluations. Passive remediation, phytoremediation and monitored natural attenuation (MNA) have been occurring since the end of the irrigation season in November 2009.

11. Recommendations

- 1) GeoTek recommends that groundwater monitoring activities in 2013 continue on a semi-annual basis. We recommend monitoring activities be completed in late March/early April and late September/early October 2013. A semi-annual report will be provided after analytical results from the Spring 2013 monitoring event are received. The 2013 annual report will be provided in early 2014 and will include the results of the Fall 2013 monitoring event.
- 2) GeoTek recommends that sampling of monitoring well TC-7 return to an annual basis. The well will be sampled during the Fall 2013 monitoring event.
- 3) We recommend that the MNA monitoring continue to be completed annually. We anticipate completing the MNA monitoring in approximately June, comparable to the past 2 years.
- 4) Resuming operation of the XiTech system at MW-4R is not recommended. The product thickness at this location has been minimal. Hand bailing of the well on a monthly basis will continue. If the monthly checks indicate product thickness is increasing significantly, consideration will be given to resuming use of the XiTech skimmer system.
- 5) It is recommended that tree core sampling be completed during the summer of 2013. Results will be provided in the 2013 Annual Report.
- 6) The 2009 EPA Five Year Review Report contained a recommendation that Vogel's place an environmental covenant (s) on-site and off-site. A draft on-site environmental covenant has been prepared and submitted to the IDNR for review. The covenant will provide specific activity and land use limitations on-site, including restrictions on groundwater use; drinking well installation activities; and excavation activities and construction activities in the lead contaminated soils area on-site. It is recommended that the completion of an off-site environmental covenant continue to be explored.
- 7) The 2009 EPA Five Year Review Report also contained a recommendation to complete a ROD Amendment, ESD, or other appropriate mechanisms to document the post-ROD changes. Continued implementation of the recommendations listed above will provide information to help support post-ROD changes to the groundwater remedy. It is recommended that Vogel's work with the DNR and set a goal to prepare a ROD amendment or ESD by the end of 2013.

12. Standard of Care

Recommendations contained in this report represent our professional opinions. These opinions are based on information currently available and arrived in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this no warranty is implied or intended.

GeoTek Engineering & Testing Services, Inc. appreciates the opportunity of providing our services on this project. Please contact our office if there are questions regarding the project or the report.

Respectfully submitted,

Keith DeLange
Sr. Project Manager

Report reviewed by

Linda Watts, CPG
Sr. Project Manager

TABLE 1								
GROUNDWATER MONITORING DATA (ug/L)								
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
03/24/2004	BOS	<2	<2	<2	<5	<5	<5	<5
06/25/2004	BOS	<2	<2	<2	<5	<5	<5	<5
09/27/2004	BOS	<2	<2	<2	<5	<5	<5	<5
12/14/2004	BOS	<2	<2	<2	<5	<5	<5	<5
03/16/2005	BOS	<2	<2	<2	<5	<5	<5	<5
06/20/2005	BOS	<2	<2	<2	<5	<5		
12/22/2005	BOS	<2	<2	<2	<5	<5		
11/13/2006	BOS	<2	<2	<2	<5	<5		
11/19/2007	BOS	<2	<2	<2	<5	<5		
11/20/2008	BOS	<2	<2	<2	<5	<5		
11/06/2009	BOS	1	<1	<1	<4	<10		
10/05/2010	BOS	<0.195	<0.196	<0.211	<0.407	<0.722		
09/27/2011	BOS	<0.5	<1	<1	<3	<10		
09/26/2012	BOS	<0.5	<1	<1	<3	<10		
03/24/2004	NIESS	<2	<2	<2	<5	<5	<5	<5
06/25/2004	NIESS	<2	<2	<2	<5	<5	<5	<5
09/27/2004	NIESS	<2	<2	<2	<5	<5	<5	<5
12/14/2004	NIESS	<2	<2	<2	<5	<5	<5	<5
03/16/2005	NIESS	<2	<2	<2	<5	<5		
06/20/2005	NIESS	<2	<2	<2	<5	<5		
12/22/2005	NIESS	<2	<2	<2	<5	<5		
11/13/2006	NIESS	<2	<2	<2	<5	<5		
11/19/2007	NIESS	<2	<2	<2	<5	<5		
11/20/2008	NIESS	<2	<2	<2	<5	<5		
12/06/2009	NIESS	<0.5	<1	<1	<4	<10		
10/05/2010	NIESS	<0.195	<0.196	<0.211	<0.407	<0.722		
09/27/2011	NIESS	<0.5	<1	<1	<3	<10		
09/26/2012	BOS	<0.5	<1	<1	<3	<10		
03/24/2004	GMW-1	<2	<2	<2	<5	<5	<5	<5
06/25/2004	GMW 1	<2	<2	<2	<5	<5	<5	<5
09/27/2004	GMW-1	<2	<2	<2	<5	<5	<5	<5
12/14/2004	GMW-1	<2	<2	<2	<5	<5		
03/16/2005	GMW-1	<2	<2	<2	<5	<5	<5	<5
06/20/2005	GMW-1	<2	<2	<2	<5	<5		
12/22/2005	GMW-1	<2	<2	<2	<5	<5		
11/19/2007	GMW-1	<2	<2	<2	<5	<5		
02/28/1996	GMW-2	19	3090	15000	33200	2250		
09/30/1996	GMW-2	<20	290	2330	9280	<5		
08/27/1997	GMW-2	<20	2360	15200	42200	53		
08/27/1997	GMW-2	<20	1930	10600	26400	<50		
03/20/1998	GMW-2	12	7380	10900	26800	15		
03/27/2001	GMW-2	<2	76	1420	16900	<5		
10/04/2001	GMW-2	<20	170	1090	9260	<50		
12/14/2001	GMW-2	<20	106	298	3580	<50		
03/29/2002	GMW-2	<2	144	920	4990	<50		
06/27/2002	GMW-2	<20	114	960	4610	<50		
09/26/2002	GMW-2	<20	160	1350	7130	<50		
12/11/2002	GMW-2	<20	504	2370	11920	<50		
05/14/2008	GMW 2	<2	<2	<2	<5	<10		
08/07/2008	GMW-2	<2	<2	<2	<5	<10		
08/27/2008	GMW-2	<2	<2	<2	<5	<10		
10/27/2008	GMW 2	<2	<2	<2	<5	<10		
05/12/2009	GMW 2	<2	<2	<2	<3			
07/08/2009	GMW 2	<2	<2	<2	<3			
09/17/2009	GMW 2	<2	5	19	87			
03/24/2004	GMW-3	<2	<2	<2	<5	<5		
06/25/2004	GMW-3	<2	<2	<2	<5	<5		
09/27/2004	GMW-3	<2	<2	<2	<5	<5		
12/14/2004	GMW-3	<2	<2	<2	<5	<5		
03/16/2005	GMW-3	<2	<2	<2	<5	<5	<5	<5
06/20/2005	GMW-3	<2	<2	<2	<5	<5	<5	<5
12/22/2005	GMW-3	<2	<2	<2	<5	<5	<5	<5
11/13/2006	GMW-3	<2	<2	<2	<5	<5	<5	<5
11/19/2007	GMW-3	<2	<2	<2	<5	<5		
11/20/2008	GMW-3	<2	<2	<2	<5	<5		
11/06/2009	GMW 3	<0.5	<1	<1	<4	<10		
10/05/2010	GMW-3	<0.195	<0.196	<0.211	<0.407	<0.722		
09/27/2011	GMW-3	<0.5	<1	<1	<3	<10		
09/26/2012	GMW-3	4.66	<1	<1	351	<10		
03/27/2001	GMW-6	<2	<2	<2	<5	<5		
08/15/2003	GMW-6	<2	<2	<2	<5	<5		
06/25/2004	GMW-6	<2	<2	<2	<5	<5		
03/02/2011	GMW-6	<0.5	<1	<1	<3	<10		
05/09/2011	GMW-6	<0.5	<1	<1	<3	<10		
09/27/2011	GMW-6	<0.5	<1	<1	<3	<10		
12/09/2011	GMW 6	<0.5	<1	<1	<3	<10		
07/17/2003	REPLACED							
07/24/2003	GMW-7R	12	16	5470	15800	<5		
07/28/2003	GMW-7R	36	58	7770	22400	<50		
08/01/2003	GMW-7R	<20	<20	5130	14500	<50		
08/14/2003	GMW-7R	<20	<20	3090	8550	<50	<5	<5
08/29/2003	GMW-7R	<2	<2	210	550	<5	<50	<50
09/26/2003	GMW-7R	5	<5	2480	5660	<5	<50	<50
10/15/2003	GMW 7R	<2	3	3330	5940	<5	<50	<50
11/21/2003	GMW-7R	7	33	4660	9360	<5	<5	<5
12/02/2003	GMW 7R	<2	21	4410	1740	<5	<5	<5
01/13/2004	GMW-7R	<2	160	4880	9920	<5	<5	<5
02/04/2004	GMW-7R	5	84	3440	7210	<5	<5	<5
03/24/2004	GMW 7R	4	24	2620	6270	<5	<5	<5

TABLE 1 GROUNDWATER MONITORING DATA (ug/L) VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
04/30/2004	GMW-7R	<2	<2	1280	3400	<5	<5	<5
05/27/2004	GMW-7R	<2	<2	1430	3780	<5	<5	<5
06/23/2004	GMW-7R	<2	<2	1770	4230	<5	<5	<5
07/19/2004	GMW-7R	<2	<2	95	204	<5	<5	<5
09/27/2004	GMW-7R	<2	<2	<2	<5	<5	<5	<5
10/27/2004	GMW-7R	<2	<2	26	51	<5	<5	<5
12/14/2004	GMW-7R	<2	<2	314	1010	<5	<5	<5
01/18/2005	GMW-7R	<2	<2	500	1350	<5	<5	<5
02/28/2005	GMW-7R	<2	<2	835	2470	<5	<5	<5
03/15/2005	GMW-7R	<2	<2	439	1030	<5	<5	<5
04/07/2005	GMW-7R	62	460	690	1840	<5	<5	<5
05/24/2005	GMW-7R	<20	<20	749	2650	<50	<5	<5
06/20/2005	GMW-7R	<2	<2	930	2720	<5	<5	<5
08/12/2005	GMW-7R	<2	<2	3720	9060	<5	<5	<5
09/29/2005	GMW-7R	<2	<2	3150	7970	<5	<50	<50
10/24/2005	GMW-7R	<2	<2	2270	6190	<5	<5	<5
12/02/2005	GMW-7R	<2	<2	1810	5520	<5	<5	<5
12/22/2005	GMW-7R	<2	<2	1770	5340	<5	<5	<5
01/31/2006	GMW-7R	<2	<2	2070	6330	<5	<5	<5
02/22/2006	GMW-7R	<20	<20	981	3550	<50	<5	<5
03/20/2006	GMW-7R	<20	<20	1230	4030	<50	<5	<5
04/19/2006	GMW-7R	<20	<20	1880	6220	<50	<5	<5
05/16/2006	GMW-7R	<20	<20	1220	4050	<50	<50	<50
06/19/2006	GMW-7R	<20	<20	2180	7200	<50		
07/17/2006	GMW-7R	<2	<2	896	3040	<5		
08/21/2006	GMW-7R	<20	<20	2100	6970	<50		
09/18/2006	GMW-7R	<20	<20	2200	7470	<5		
10/16/2006	GMW-7R	<20	<20	2420	7400	<50		
11/13/2006	GMW-7R	<20	<20	2820	8910	<50		
12/14/2006	GMW-7R	<20	<20	1350	4480	<50		
01/15/2007	GMW-7R	<20	<20	1620	5090	<50		
02/15/2007	GMW-7R	2	<2	1640	5890	<50		
03/06/2007	GMW-7R	<2	<2	2310	7270	<50		
04/16/2007	GMW-7R	<2	<2	2750	7540	<5		
05/16/2007	GMW-7R	<2	<2	2940	8570	<5		
06/20/2007	GMW-7R	<2	<2	2180	6411	<5		
07/16/2007	GMW-7R	<2	<2	2070	6090	<5		
08/17/2007	GMW-7R	<2	<2	1240	4370	<5		
09/17/2007	GMW-7R	<2	<2	1360	4850	<5		
10/22/2007	GMW-7R	<2	<2	1790	6580	<10		
11/19/2007	GMW-7R	4	<2	2270	7230	<10		
12/14/2007	GMW-7R	4	<2	2020	6940	<10		
1/17/08	GMW-7R	3	<2	1320	4610	<10		
02/22/2008	GMW-7R	3	<2	2320	7700	<10		
03/24/2008	GMW-7R	4	<2	2370	7500	<10		
04/22/2008	GMW-7R	5	<2	2700	8800	<10		
05/14/2008	GMW-7R	3	<2	1280	4090	<10		
06/23/2008	GMW-7R	3	2	1800	5720	<10		
07/18/2008	GMW-7R	3	4	938	3300	<10		
08/19/2008	GMW-7R	3	4	1060	3320	<10		
09/30/2008	GMW-7R	<2	<2	642	2180	<10		
10/27/2008	GMW-7R	3	<2	1300	4910	<10		
11/20/2008	GMW-7R	3	<2	2070	6290	<10		
12/18/2008	GMW-7R	4	<2	1980	5830	<10		
01/19/2009	GMW-7R	3	<2	1460	4670	<10		
03/11/2009	GMW-7R	<25	<25	2450	8000			
06/25/2009	GMW-7R	4	<2	2260	6770			
09/17/2009	GMW-7R	5	<2	2750	9700			
11/06/2009	GMW-7R	4	<1	3350	12400	<10		
03/18/2010	GMW-7R	2	<1.0	2600	10100	<10		
06/17/2010	GMW-7R	<10	<20	1570	5420	<200		
10/05/2010	GMW-7R	<19.5	<19.5	2500	8850	<72.2		
12/07/2010	GMW-7R	<10	<20	2480	8150	<200		
03/02/2011	GMW-7R	<10	<20	2000	6970	<200		
06/09/2011	GMW-7R	<10	<20	1100	4160	<200		
09/27/2011	GMW-7R	<10	<20	3090	11600	<200		
12/09/2011	GMW-7R	<10	<20	1850	6670	<200		
03/19/2012	GMW-7R	<5	<10	1580	6040	<100		
09/26/2012	GMW-7R	<5	<10	2370	9070	<100		
		Average		2100	6200			
03/24/2004	GMW-8	<2	<2	<2	<5	<5		
06/25/2004	GMW-8	<2	<2	<2	<5	<5		
09/27/2004	GMW-8	<2	<2	<2	<5	<5		
12/14/2004	GMW-8	<2	<2	<2	<5	<5	<5	<5
03/16/2005	GMW-8	<2	<2	<2	<5	<5	<5	<5
06/20/2005	GMW-8	<2	<2	<2	<5	<5	<5	<5
12/22/2005	GMW-8	<2	<2	<2	<5	<5	<5	<5
11/13/2006	GMW-8	<2	<2	<2	<5	<5	<5	<5
11/19/2007	GMW-8	<2	<2	<2	<5	<10		
11/20/2008	GMW-8	<2	<2	<2	<5	<10		
11/06/2009	GMW-8	<0.5	<1	<1	<4	<10		
10/05/2010	GMW-8	<0.195	<0.196	<0.211	<0.407	<0.722		
09/27/2011	GMW-8	<0.5	<1	<1	<3	<10		
09/26/2012	GMW-8	<0.5	<1	<1	<3	<10		
03/29/2002	GMW-9R	<20	14300	23400	80400	<50		
06/27/2002	GMW-9R	<20	4710	12500	48900	<50		
09/26/2002	GMW-9R	84	8670	13100	50500	<50		
12/11/2002	GMW-9R	48	32200	33440	115000	<5		
03/26/2003	GMW-9R	<20	7400	16100	53600	<5		
06/12/2003	GMW-9R	<20	5610	12700	44700	<50		
08/15/2003	GMW-9R	5	3100	3200	24700	<50	<5	<5
12/24/2004	GMW-9R	11	3750	10100	23100	<50	<50	<50

TABLE 1								
GROUNDWATER MONITORING DATA (ug/L)								
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
06/25/2004	GMW-9R	<20	7420	15200	54300	<50	<50	<50
09/27/2004	GMW-9R	<20	7850	2300	76500	<50	<50	<50
12/14/2004	GMW-9R	<20	9970	15500	55700	<50	<50	<50
03/16/2005	GMW-9R	<20	3530	8310	29300	<50	<50	<50
06/20/2005	GMW-9R	<20	4250	8790	32000	<50	<50	<50
12/22/2005	GMW-9R	<20	5390	17000	55100	<50	<50	<50
03/20/2006	GMW-9R	<20	1110	4380	14800	<50	<50	<50
06/19/2006	GMW-9R	<20	3670	13600	42800	<50	<50	<50
09/18/2006	GMW-9R	<20	2720	7900	23300	<50		
11/13/2006	GMW-9R	<20	2980	7880	24100	<50		
03/06/2007	GMW-9R	<20	2910	6250	19300	<50		
06/20/2007	GMW-9R	<20	1930	4210	12100	<50		
11/19/2007	GMW-9R	<20	1740	5750	18300	<50		
03/24/2008	GMW-9R	21	1810	6620	23200	<100		
06/23/2008	GMW-9R	6	1110	4640	9230	<10		
08/07/2008	GMW-9R	<20	340	1430	4630	<100		
08/27/2008	GMW-9R	53	245	1600	5220	<100		
09-19-08	GMW-9R	<2	8	407	1410	<10		
10/27/2008	GMW-9R	7	1180	3550	12800	<10		
11/20/2008	GMW-9R	11	2370	8720	27400	<10		
03/11/2009	GMW-9R	<25	6960	17400	66400			
05/12/2009	GMW-9R	12	2780	9660	34700			
06/25/2009	GMW-9R	6	1280	5200	16200			
09/17/2009	GMW-9R	16	4150	12200	43600			
11/06/2009	GMW-9R	10	2300	11900	45600	<100		
03/18/2010	GMW-9R	13	4270	8910	35600	15		
06/17/2010	GMW-9R	<50	3020	11600	40400	<1000		
10/05/2010	GMW-9R	<19.5	1400	9650	33200	<72.2		
12/07/2010	GMW-9R	7	574	4850	18300	<100		
03/02/2011	GMW-9R	<50	3830	13200	50400	<1000		
06/09/2011	GMW-9R	<50	2350	9240	32500	<1000		
09/27/2011	GMW-9R	60	2630	14700	58400	<1000		
12/09/2011	GMW-9R	<50	3580	17900	66800	<1000		
03/19/2012	GMW-9R	<50	2870	10400	41700	<1000		
09/26/2012	GMW-9R	<50	3430	17900	69900	<1000		
09/30/1996	GMW-10	97	8260	17900	45900	<50		
03/26/1997	GMW-10	<24	480	14100	18900	63		
06/17/1997	GMW-10	79	8230	28900	129000	96		
08/28/1997	GMW-10	43	5600	13000	371000	<50		
11/12/1997	GMW-10	15	1480	6380	25100	<5		
03/20/1998	GMW-10	<2	<2	<2	<5	<5		
03/20/1998	GMW-10	<2	8	520	1220	8		
06/19/1998	GMW-10	17	1800	4510	19500	110		
09/17/1998	GMW-10	49	1930	5950	27300	56		
12/15/1998	GMW-10	31	2200	7070	37800	45		
03/26/1999	GMW-10	26	2010	5320	23600	<5		
06/23/1999	GMW-10	<2	28	190	540	<5		
09/29/1999	GMW-10	<2	<2	2	12	<5		
03/29/2000	GMW-10	<5	6	210	320	<5		
06/29/2000	GMW-10	<2	<2	53	39	16		
07/21/2000	GMW-10	2	250	540	2570			
12/01/2000	REMOVED							
09/25/2001	REPLACED					<50		
03/29/2002	GMW-10	<20	230	7940	29900	<50		
06/27/2002	GMW-10	<20	555	7030	29900	<50		
09/26/2002	GMW-10	7	630	8720	30100	<5		
12/11/2002	GMW-10	<2	336	10520	42600	<50		
06/15/2003	GMW-10	<20	460	4780	20000	<10		
08/07/2008	GMW-10	<2	10	85	346	<100		
08/27/2008	GMW-10	<20	<20	201	644	<100		
10/27/2008	GMW-10	3	191	3630	14500			
05/12/2009	GMW-10	11	890	6940	23500			
07/08/2009	GMW-10	10	378	6440	20900			
09/17/2009	GMW-10	3	72	875	3060			
09/29/2001	INSTALLED					<5		
03/29/2002	GMW-13	115	4220	24900	93200	<50		
06/27/2002	GMW-13	<20	4700	16900	63600	<50		
09/26/2002	GMW-13	14	6800	22800	78800	<5		
12/1/2002	GMW-13	16	11600	25300	96000	<50		
03/26/2003	GMW-13	<20	10100	24600	73500	<50		
06/12/2003	GMW-13	<20	6150	23100	90400	<50	<50	<50
08/15/2003	GMW-13	10	5410	17300	69400	<50	<50	<50
12/02/2003	GMW-13	<20	10500	23500	87200	<50	<50	<50
03/24/2004	GMW-13	<20	4760	15500	77100	<50	<50	<50
06/25/2004	GMW-13	<20	6650	24400	100000	<50	<50	<50
09/27/2004	GMW-13	<20	13200	37800	135000	<50	<50	<50
12/14/2004	GMW-13	<20	4660	16000	73500	<50	<50	<50
03/16/2005	GMW-13	<20	5280	18400	75900	<50	<50	<50
06/20/2005	GMW-13	<20	6930	20000	78400	<50	<50	<50
12/2/2005	GMW-13	<20	6970	20400	88200	<50		
1/13/2006	GMW-13	<20	8370	20700	87600	<100		
1/19/2007	GMW-13	<20	4350	10300	55800	<100		
11/20/2008	GMW-13	<20	6160	13400	60400			
06/25/2009	GMW-13	6	9180	16300	68300			
11/06/2009	GMW-13	<50	8330	19900	112000	<1000		
10/05/2010	GMW-13	<19.5	11200	25100	109000	<72.2		
09/27/2011	GMW-13	<50	5430	16900	77400	<1000		
09/26/2012	GMW-13	<50	12900	24700	105000	<1000		
	GMW-15					<50		
07/18/2003	TW-2	2	30	1350	1690	<50		
07/28/2003	TW-2	<20	48	2190	3250	<5		
08/01/2003	TW-2	<20	<20	5130	14500	<5		

TABLE 1 GROUNDWATER MONITORING DATA (ug/L) VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
8/14/2003	ULimits	5	1000	700	10000	400		
08/25/2004	TW-2	<2	50	566	1400	<5	<5	<5
09/29/2003	GMW-15	<2	<2	640	1980	<5	<5	<5
12/02/2003	GMW-15	<2	11	1970	4580	<5	<5	<5
01/13/2004	GMW-15	<2	24	2340	4440	<5	<5	<5
03/24/2004	GMW-15	3	20	2020	4800	<5	<5	<5
06/25/2004	GMW-15	<2	<2	294	673	<5	<5	<5
09/27/2004	GMW-15	<2	<2	>2	6	<5	<5	<5
12/14/2004	GMW-15	<2	<2	>2	<5	<5	<5	<5
01/18/2005	GMW-15	<2	<2	2	20	<5	<5	<5
02/28/2005	GMW-15	<2	<2	<2	7	<5	<5	<5
03/16/2005	GMW-15	<2	<2	<2	7	<5	<5	<5
04/07/2005	GMW-15	<2	<2	8	19	<5	<5	<5
05/24/2005	GMW-15	<2	<2	79	243	<5	<5	<5
06/20/2005	GMW-15	<2	<2	913	2360	<5	<5	<5
08/12/2005	GMW-15	<2	<2	2860	6470	<5	<5	<5
09/29/2005	GMW-15	<2	<2	4880	7630	<5	<5	<5
10/24/2005	GMW-15	<2	<2	2790	5260	<5	<5	<5
12/02/2005	GMW-15	<2	<2	3040	8230	<5	<5	<5
12/22/2005	GMW-15	<2	61	2550	5920	<50	<5	<5
01/31/2006	GMW-15	<2	61	2880	7430	<50	<5	<5
02/22/2006	GMW-15	<20	<20	2530	5664	<50	<50	
03/20/2006	GMW-15	<20	<20	2610	6140	<5		
04/19/2006	GMW-15	<20	<20	2170	4070	<5		
05/16/2006	GMW-15	<5	4	1370	2300	<5		
06/19/2006	GMW-15	7	<2	3800	6200	<50		
07/17/2006	GMW-15	6	<2	2020	3760	<50		
08/21/2006	GMW-15	<20	<20	4400	10100	<50		
09/18/2006	GMW-15	<20	<20	4870	11000	<50		
10/16/2006	GMW-15	<20	<20	5630	12400	<50		
11/13/2006	GMW-15	<20	<20	6010	13100	<50		
12/14/2006	GMW-15	<20	<20	3350	9090	<50		
01/15/2007	GMW-15	<20	<20	4590	9540	<50		
02/15/2007	GMW-15	5	<2	3550	7360	<50		
03/06/2007	GMW-15	<20	<20	3080	6500	<50		
04/16/2007	GMW-15	<20	<20	1870	3380	<50		
05/16/2007	GMW-15	<20	<20	1900	3790	<50		
06/20/2007	GMW-15	<20	<20	4320	7640	<50		
07/16/2007	GMW-15	<20	<20	4380	10400	<100		
08/17/2007	GMW-15	<20	<20	4330	7550	<100		
09/17/2007	GMW-15	<20	<20	3510	7770	<10		
10/22/2007	GMW-15	<20	<20	1140	2660	<100		
11/19/2007	GMW-15	<2	<2	2610	5500	<100		
12/14/2007	GMW-15	<20	<20	4020	9720	<100		
01/17/2008	GMW-15	<20	25	5120	13800	<100		
02/22/2008	GMW-15	<20	<20	3480	9060	<100		
03/24/2008	GMW-15	<20	<20	1910	5750	<100		
04/22/2008	GMW-15	<20	<20	1770	5680	<100		
05/14/2008	GMW-15	<20	<20	1440	6460	<100		
06/23/2008	GMW-15	<20	<20	2190	9870	<100		
07/18/2008	GMW-15	<20	<20	1600	5840	<100		
08/18/2008	GMW-15	<20	<20	985	4770	<100		
09/19/2008	GMW-15	<20	<20	1450	5880	<10		
10/27/2008	GMW-15	<20	<20	491	1560	<100		
11/20/2008	GMW-15	7	<2	699	2000	<100		
12/18/2008	GMW-15	<20	<20	1150	3840			
01/19/2009	GMW-15	<20	<20	1780	6050			
03/11/2009	GMW-15	<25	<25	1550	10650			
06/25/2009	GMW-15	5	2	1540	6210			
09/17/2009	GMW-15	9	<20	1360	7540			
11/06/2009	GMW-15	8	<1	1280	7570	<10		
11/06/2009	GMW-15	<100	<100	380	2400		IDNR Split sample	
03/18/2010	GMW-15	2	5	701	3150	<10		
06/17/2010	GMW-15	6	<10	1650	6410	<100		
10/05/2010	GMW-15	8	2	2640	13600	<7.22		
12/07/2010	GMW-15	6	<10	1090	8870	<100		
03/02/2011	GMW-15	6	<10	1190	4890	<100		
06/09/2011	GMW-15	9	<10	3860	16300	<100		
09/27/2011	GMW-15	11.1	<10	6890	25800	<100		
12/09/2011	GMW-15	14	<10	10200	32600	<100		
03/19/2012	GMW-15	<50	<100	6940	24700	<1000		
09/26/2012	GMW-15	<10	<20	6570	23000	<200		
	GMW-16					<50		
07/18/2003	TW-1	6	1110	5400	12700	<5		
07/28/2003	TW-1	<20	155	2600	8360	<5		
08/01/2003	TW-1	<20	322	3670	12600	<5	<5	<5
08/14/2003	TW-1	2	25	334	883	<5	<5	<5
09/29/2003	GMW-16	<2	56	189	715	<5	<5	<5
12/02/2003	GMW-16	<2	<2	159	470	<5	<5	<5
01/13/2004	GMW-16	<2	<2	142	324	<5	<5	<5
03/24/2004	GMW-16	<2	<2	635	2220	<5	<5	<5
06/25/2004	GMW-16	<2	<2	113	399	<5	<5	<5
09/27/2004	GMW-16	<2	5	159	397	<5	<5	<5
12/14/2004	GMW-16	<2	<5	75	227	<5	<5	<5
03/16/2005	GMW-16	<2	<5	73	155	<5		
06/20/2005	GMW-16	<2	<5	316	902	<5		
12/22/2005	GMW-16	<2	10	2450	8260	<100		
11/13/2006	GMW-16	<2	27	3720	11100			
11/19/2007	GMW-16	6	33	2870	8940	<50		
11/20/2008	GMW-16	<20	<20	1700	4460	<50		
11/06/2009	GMW-16	5	37	5940	20200	<10	<50	<50
10/05/2010	GMW-16	<19.5	<19.6	4020	11500	<72.2		
09/27/2011	GMW-16	<5	19.3	1080	3060	<100		
09/26/2012	GMW-16	<5	<10	507	1480	<100		

TABLE 1							
GROUNDWATER MONITORING DATA (ug/L)							
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012							
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2
Limits		5	1000	700	10000	400	
07/28/2003	TW 3	29	3310	15400	58800	<5	<50
08/01/2003	TW-3	<20	400	1700	7480	<5	<5
08/14/2003	TW-3	<20	206	1140	4480	<5	<5
09/29/2003	GMW 17	<2	32	42	202	<5	<5
12/02/2003	GMW-17	<2	<2	6	20	<5	<5
03/24/2004	GMW-17	<2	<2	2	10	<5	<5
06/25/2004	GMW-17	<2	<2	19	425	<5	<5
09/27/2004	GMW-17	<2	123	274	1180	<5	<5
12/14/2004	GMW-17	<2	<2	330	1320	<5	<5
01/19/2005	GMW-17	<2	103	305	1550	<5	<5
02/28/2005	GMW 17	<2	136	250	999	<5	<5
03/16/2005	GMW-17	<2	155	261	996	<5	<5
04/07/2005	GMW 17	<2	56	79	420	<5	<5
05/24/2005	GMW-17	<2	<2	47	519	<5	<5
06/20/2005	GMW-17	<2	<2	40	128	<5	
12/22/2005	GMW-17	<2	<2	109	535	<5	
03/20/2006	GMW 17	<2	<2	<5	<5	<5	
06/19/2006	GMW 17	<2	<2	5	6	<5	
09/18/2006	GMW-17	<2	<2	8	21	<5	
11/13/2006	GMW-17	<2	<2	<2	15	<10	
03/06/2007	GMW-17	<2	<2	<2	<5	<10	
06/20/2007	GMW 17	<2	<2	800	361	<10	
11/19/2007	GMW-17	<2	<2	9	10	<10	
03/24/2008	GMW 17	<2	<2	14	23	<10	
06/23/2008	GMW-17	<2	<2	133	230		
09-19-08	GMW 17	<2	<2	<2	<5		
11/20/2008	GMW-17	<2	<2	<2	<5		
03/11/2009	GMW-17	<1	<1	2	6		
06/25/2009	GMW-17	<2	<2	<2	4	<5	
09/7/2009	GMW-17	5	23	70	325	<5	
11/05/2009	GMW-17	<0.5	<1	2	6	<10	
03/18/2010	GMW-17	<0.5	<1	<1	<3	<10	
06/17/2010	GMW-17	<0.5	<1	20	32	<10	
10/05/2010	GMW-17	<0.195	<0.196	32	57	<0.722	
12/07/2010	GMW-17	<0.5	<1.0	<1.0	<3.0	<10.0	
03/02/2011	GMW-17	<0.5	<1.0	122	327	<10.0	
06/09/2011	GMW-17	<0.5	<1.0	<1.0	<3	<10.0	
09/27/2011	GMW-17	<0.5	<1	536	17	<10	
12/09/2011	GMW 17	<0.5	<1	468	11	<10	
03/19/2012	GMW 17	<0.5	<1	<1	<3	<10	
09/26/2012	GMW-17	<0.5	<1	<1	<3	<10	
08/15/2003	TW 6	<2	21	109	341	<5	<5
09/29/2003	GMW 18	<2	<2	120	229	<5	<5
12/02/2003	GMW-18	<2	14	188	522	<5	<5
03/24/2004	GMW-18	<2	9	150	367	<5	<5
06/25/2004	GMW 18	<2	23	220	594	<5	<5
09/27/2004	GMW-18	<2	5	104	243	<5	
12/14/2004	GMW-18	<2	<2	60	174	<5	
03/16/2005	GMW 18	<2	48	393	847	<5	
06/20/2005	GMW-18	<2	6	100	313	<5	
12/22/2005	GMW 18	<2	31	574	1380	<5	
11/13/2006	GMW-18	<2	21	474	1030		
11/19/2007	GMW-18	<2	<2	8	27	<5	
11/20/2008	GMW-18	<2	47	210	677	<5	
11/06/2009	GMW-18	<0.500	36	195	565	<10	<5
10/05/2010	GMW-18	WELL SEAL FAILED					
01/26/2011	GMW-18R	WELL REPLACE WITH GMW-18R					
02/04/2011	GMW-18R	<0.5	64.10	241	737	31	
09/27/2011	GMW-18R	<0.5	<1	6.85	35.8	<10	
09/26/2012	GMW-18R	<0.5	<1	49.2	172	<10	
08/15/2003	TW-4	<2	<2	8	21	<5	<5
09/29/2003	GMW-19	<2	<2	<2	<5	<5	<5
10/15/2003	GMW-19	<2	<2	<2	<5	<5	<5
11/21/2003	GMW 19	<2	<2	<2	<5	<5	<5
12/02/2003	GMW-19	<2	<2	<2	<5	<5	<5
01/13/2004	GMW-19	<2	<2	<2	<5	<5	<5
02/04/2004	GMW 19	<2	<2	<2	<5	<5	<5
03/24/2004	GMW-19	<2	<2	104	120	<5	<5
04/30/2004	GMW-19	<2	<2	<2	7	<5	<5
05/27/2004	GMW-19	<2	<2	<2	<5	<5	<5
06/23/2004	GMW-19	<2	<2	240	397	<5	<5
07/19/2004	GMW-19	<2	<2	121	140	<5	<5
09/27/2004	GMW-19	<2	<2	3	13	<5	<5
10/27/2004	GMW 19	<2	<2	13	143	<5	
12/14/2004	GMW 19	<2	<2	8	48	<5	
03/16/2005	GMW 19	<2	<2	637	1050	<5	
12/22/2005	GMW-19	<2	<2	21	73	<5	
03/20/2006	GMW 19	<2	<2	<2	<2	<5	
06/19/2006	GMW-19	<2	<2	11	71	<5	
09/8/2006	GMW 19	<2	<2	<2	<2	<5	
11/13/2006	GMW 19	<2	<2	<2	<2	<10	
03/06/2007	GMW-19	<2	<2	<2	6	<10	
06/20/2007	GMW-19	<2	<2	408	1610	<10	
11/19/2007	GMW-19	<2	<2	376	1850	<10	
03/24/2008	GMW-19	<2	<2	4	704	<10	
06/23/2008	GMW 19	2	<2	608	3040		
09-19-08	GMW 19	<2	<2	207	702		
11/20/2008	GMW-19	<2	<2	97	732		
03/11/2009	GMW-19	<1	<1	17	536		
06/25/2009	GMW 19	<2	<2	<2	160		
09/7/2009	GMW-19	<2	<2	233	810	<50	
11/06/2009	GMW-19	1	<1	42	1120	<10	
03/18/2010	GMW 19	3	<1	572	4280	<10	

TABLE 1								
GROUNDWATER MONITORING DATA (ug/L)								
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits	*	5	1000	700	10000	400		
06/17/2010	GMW 19	<5	<10	984	3900	<100		
10/05/2010	GMW-19	<0.975	<0.980	403	1120	<3.61		
12/07/2010	GMW-19	<2.5	<5	574	2320	<50		
03/02/2011	GMW 19	<2.5	<5	92	352	<50		
06/09/2011	GMW-19	<2.5	<5	286	844	<50		
09/27/2011	GMW-19	<2.5	<5	137	477	<50		
12/09/2011	GMW-19	1	<1	25	247	<10		
03/19/2012	GMW-19	1	<1	158	680	<10		
09/26/2012	GMW 19	1.53	<1	332	1820	<10		
		Average		232	919			
08/15/2003	TW-5	<20	<20	1020	2990	<5	<5	<5
09/29/2003	GMW-20	<2	<2	66	176	<5	<5	<5
10/15/2003	GMW-20	<2	<2	420	1530	<5	<5	<5
11/21/2003	GMW 20	<2	7	1320	4640	<5	<5	<5
12/02/2003	GMW-20	<2	<2	743	2520	<5	<5	<5
01/13/2004	GMW-20	<2	<2	560	2060	<5	<5	<5
02/04/2004	GMW-20	<2	<2	2	10	<5	<5	<5
03/24/2004	GMW 20	<2	<2	134	483	<5	<5	<5
04/30/2004	GMW 20	<2	<2	<2	<5	<5	<5	<5
05/27/2004	GMW-20	<2	<2	447	1280	<5	<5	<5
06/23/2004	GMW-20	<2	<2	18	41	<5	<5	<5
07/19/2004	GMW-20	<2	<2	250	794	<5	<5	<5
09/27/2004	GMW 20	<2	<2	11	30	<5	<5	<5
10/27/2004	GMW-20	<2	<2	<2	<5	<5		
12/14/2004	GMW-20	<2		29	94	<5		
03/16/2005	GMW-20	<2	<2	32	117	<5		
12/22/2005	GMW-20	<2	<2	94	319	<50		
03/20/2006	GMW-20	<2	<2	239	643	<5		
06/19/2006	GMW-20	<2	<2	8	17	<5		
09/18/2006	GMW-20	<20	<20	352	861	<5		
11/13/2006	GMW-20	<2	<2	493	1040	<10		
03/06/2007	GMW-20	<2	<2	896	2290	<10		
06/20/2007	GMW-20	<2	<2	398	900	<10		
11/19/2007	GMW-20	<2		3	820	2460	<10	
03/24/2008	GMW 20	<2		3	343	1050	<10	
06/23/2008	GMW 20	<2	<2	124	336			
09-19-08	GMW-20	<2	<2	109	287			
11/20/2008	GMW-20	<2	<2	324	801			
03/11/2009	GMW-20	<1	<1	280	960			
06/25/2009	GMW 20	<2	<2	220	628			
09/17/2009	GMW-20	<2		6	506	1480		
11/06/2009	GMW-20	2	1	751	2820	<10		
03/18/2010	GMW-20	<0.5	<1	3	6	<10		
06/17/2010	GMW-20	1	<1	398	1170	<10		
10/05/2010	GMW-20	<0.195	<0.195	29	75	<0.722		
12/07/2010	GMW-20	<0.5	<1	21	58	<10.0		
03/02/2011	GMW 20	2	<1	1050	2950	<10.0		
06/09/2011	GMW-20	<0.5	<1	6	14	<10.0		
09/27/2011	GMW-20	<0.5	<1	63.3	184	<10		
12/09/2011	GMW-20	1	<1	356	1160	<10		
03/19/2012	GMW 20	<2.5	5	1000	3190	<50		
09/26/2012	GMW-20	<5	<10	1410	4250	<100		
		Average		384	1168			
04/05/2004	GMW-21	<2	<2	4580	10800	<5	<5	<5
04/07/2004	GMW-21	8	13	5300	12200	<5	<5	<5
04/30/2004	GMW-21	<2	<2	1070	2940	<5	<5	<5
05/27/2004	GMW-21	<2	<2	2460	6740	<5	<5	<5
06/23/2004	GMW-21	<2	<2	2510	6860	<5	<5	<5
07/19/2004	GMW-21	<2	<2	2890	9410	<5	<5	<5
09/27/2004	GMW-21	<2	15	2870	9610	<5	<50	<50
10/27/2004	GMW-21	<2	<20	6780	27200	<50	<50	<50
12/14/2004	GMW 21	<2	<20	2380	12600	<50	<50	<50
01/18/2005	GMW-21	<2	49	3670	10100	<50	<5	<5
02/28/2005	GMW-21	<20	<20	2330	7300	<5	<5	<5
03/16/2005	GMW 21	<20	<20	2740	8220	<5	<5	<5
04/07/2005	GMW-21	5	36	2450	6710	<5	<5	<5
05/24/2005	GMW-21	<2	24	1890	4900	<5	<5	<5
06/20/2005	GMW-21	<2	<20	1020	3310	<5	<5	<5
08/30/2005	GMW 21	<2	3	367	778	<5	<5	<5
09/29/2005	GMW-21	<2	<2	1240	2920	<5	<5	<5
10/24/2005	GMW-21	<2	<2	1890	6010	<5	<5	<5
12/02/2005	GMW-21	<2	<2	1580	4080	<5		
12/22/2005	GMW-21	<2	211	2880	12800	<5		
01/31/2006	GMW-21	<2	<2	1680	3990	<5		
02/22/2006	GMW-21	<2	<2	1230	2710	<5		
03/20/2006	GMW 21	<2	<2	1020	2190	<5		
04/19/2006	GMW-21	<2	<2	1430	3130	<75		
05/16/2006	GMW-21	<2	<2	1250	3010	<50		
06/19/2006	GMW-21	4	<2	1902	4950	<50		
07/17/2006	GMW-21	<30	<30	2590	6410	<50		
08/21/2006	GMW-21	<20	<20	3580	8520	<50		
09/18/2006	GMW-21	<20	<20	4330	10100	<50		
10/16/2006	GMW-21	6	<2	4440	9330	<50		
11/13/2006	GMW-21	<20	<20	4180	8890	<50		
12/14/2006	GMW-21	<20	<20	3170	7020	<50		
01/15/2007	GMW-21	<20	<20	3210	6930	<50		
02/15/2007	GMW 21	5	<2	2570	6660	<50		
03/06/2007	GMW 21	<20	<20	2960	7630	<50		
04/16/2007	GMW 21	<20	<20	3820	8050	<50		
05/16/2007	GMW-21	<20	<20	3270	7930	<50		
06/20/2007	GMW-21	<20	<20	3670	9530	<100		
07/16/2007	GMW-21	<20	<20	3800	10300	<100		
08/17/2007	GMW-21	<20	<20	4020	12400	<10		

TABLE 1 GROUNDWATER MONITORING DATA (ug/L) VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
09/17/2007	GMW-21	<20	<20	4190	12300	<100		
10/22/2007	GMW-21	<20	<20	3800	13400	<100		
11/19/2007	GMW-21	7	12	2670	7730	<100		
12/14/2007	GMW-21	<20	<20	3110	9310	<100		
01/17/2008	GMW-21	<20	<20	3450	10200	<100		
02/22/2008	GMW-21	<20	<20	4040	11700	<100		
03/24/2008	GMW-21	<20	<20	2430	7030	<100		
04/22/2008	GMW-21	<20	<20	4240	12000			
05/14/2008	GMW-21	<20	<20	2500	6830			
06/23/2008	GMW-21	<20	<20	2580	6750	<100		
08/18/2008	GMW-21	11	<2	3340	9240	<100		
09/19/2008	GMW-21	<20	<20	2820	8500	<100		
10/27/2008	GMW-21	<20	<20	3160	9150	<100		
11/20/2008	GMW-21	<20	<20	4890	11800			
12/18/2008	GMW-21	3	<2	1440	3510			
01/19/2009	GMW-21	<20	<20	1830	5360			
03/11/2009	GMW-21	<25	<25	2800	6640			
06/25/2009	GMW-21	3	<2	1680	4880			
09/17/2009	GMW-21	7	<2	3100	8880			
11/06/2009	GMW-21	4	<1	3230	10100	<10		
11/06/2009	GMW-21	<100	<100	2400	7300			IDNR Split Sample
03/18/2010	GMW-21	3	<100	968	3600	<10		
06/17/2010	GMW-21	<5	<10	443	1840	<100		
10/05/2010	GMW-21	<3.90	<3.92	578	2300	<14.4		
12/07/2010	GMW-21	<10.0	<20.0	1120	4470	<200		
03/02/2011	GMW-21	<10.0	<20.0	617	2630	<200		
06/09/2011	GMW-21	23	23	774	3040	<200		
09/27/2011	GMW-21	<10	<20	411	1730	<200		
12/09/2011	GMW-21	<5	<10	1030	3560	<100		
03/19/2012	GMW-21	4	<5	1870	5100	<50		
09/26/2012	GMW-21	5.8	<10	3630	10400			
		Average		2622	7412			
04/05/2004	GMW-22	<2	<2	3270	6220	<5	<5	<5
04/07/2004	GMW-22	5	<2	2230	4710	<5	<5	<5
04/30/2004	GMW-22	<2	<2	<2	5	<5	<5	<5
05/27/2004	GMW-22	<2	<2	1410	2440	<5	<5	<5
06/23/2004	GMW-22	<2	<2	3470	5400	<5	<5	<5
07/19/2004	GMW-22	<2	<2	2910	3890	<5	<5	<5
09/27/2004	GMW-22	<20	<20	2070	3440	<5		
10/27/2004	GMW-22	<20	<20	2080	3090	<5		
12/14/2004	GMW-22	<2	<2	635	1200	<5	<5	<5
03/16/2005	GMW-22	<2	<2	641	1220	<5	<5	<5
11/20/2008	GMW-22	4	<2	151	2990	<5	<5	<5
04/05/2004	GMW-23	<2	<2	26	67	<5	<5	<5
04/07/2004	GMW-23	<2	<2	<2	<5	<5	<5	<5
04/30/2004	GMW-23	<2	<2	<2	<5	<5	<5	<5
05/27/2004	GMW-23	<2	<2	<2	<5	<5	<5	<5
06/23/2004	GMW-23	<2	<2	<2	<5	<5	<5	<5
07/19/2004	GMW-23	<2	<2	<2	<5	<5	<5	<5
09/27/2004	GMW-23	<2	<2	6	38	<5		
10/27/2004	GMW-23	<2	<2	<2	<5	<5		
12/14/2004	GMW-23	<2	<2	3	40	<5	<5	<5
03/16/2005	GMW-23	<2	<2	<2	<5	<5		
04/12/2006	GMW-23	<2	<2	<2	<5	<5	<5	<5
11/17/2004	SB-1	8	11	3790	9630	<5	<5	<5
11/17/2004	SB-2	<2	<2	<2	<5	<50	<50	<50
11/18/2004	SB-3	<2	<2	<2	<5	<5	<5	<5
11/18/2004	SB-4	<20	7890	23800	96900	<5	<5	<5
11/22/2004	GMW-24	<2	<2	<2	<5	<5		
12/14/2004	GMW-24	<2	<2	<2	<5	<5	<5	<5
03/16/2005	GMW-24	<2	<2	<2	<5	<5	<5	<5
04/12/2006	GMW-24	<2	<2	<2	<5	<5	<5	<5
11/23/2004	GMW-25	<2	413	653	3680	<5	<5	<5
12/14/2004	GMW-25	<2	234	506	2030	<5	<5	<5
01/18/2005	GMW-25	<2	318	744	2860	<5	<5	<5
02/28/2005	GMW-25	<2	177	613	2060	<5	<5	<5
03/16/2005	GMW-25	<2	226	638	2260	<5	<5	<5
04/07/2005	GMW-25	<2	163	498	1760	<5	<5	<5
05/24/2005	GMW-25	<2	107	338	1030	<5	<5	<5
06/20/2005	GMW-25	<2	59	191	648	<5	<5	<5
08/30/2005	GMW-25	<2	<2	88	189	<5	<5	<5
09/29/2005	GMW-25	<2	<2	57	123	<5	<5	<5
10/24/2005	GMW-25	<2	<2	68	141	<5	<5	<5
12/02/2005	GMW-25	<2	<2	22	<5	<5		
12/22/2005	GMW-25	<2	<2	50	29	<5		
01/31/2006	GMW-25	<2	<2	<2	<5	<5		
02/22/2006	GMW-25	<2	<2	17	<5	<5		
03/20/2006	GMW-25	<2	<2	29	51	<5		
04/19/2006	GMW-25	<2	<2	16	54	<5		
05/16/2006	GMW-25	<2	<2	10	31	<5		
06/19/2006	GMW-25	<2	<2	<2	6	<5		
07/17/2006	GMW-25	<2	3	18	63	<5		
08/21/2006	GMW-25	<2	9	87	254	<5		
09/18/2006	GMW-25	<2	9	83	250	<5		
10/16/2006	GMW-25	<2	10	95	262	<5		
11/13/2006	GMW-25	<2	10	79	231	<5		
12/14/2006	GMW-25	<2	<2	<2	25	<5		

TABLE 1 GROUNDWATER MONITORING DATA (ug/L)								
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
01/15/2007	GMW-25	<2	<2	7	29	<5		
02/15/2007	GMW-25	<2	<2	9	35	<5		
03/06/2007	GMW-25	<2	<2	<2	<2	<5		
04/16/2007	GMW-25	<2	3	11	50	<5		
05/16/2007	GMW-25	<2	9	33	128	<5		
06/20/2007	GMW-25	<2	6	23	* 87	<10		
07/16/2007	GMW-25	<2	6	23	85	<10		
08/17/2007	GMW-25	<2	7	30	110	<10		
09/17/2007	GMW-25	<2	10	38	165	<10		
10/22/2007	GMW-25	<2	<2	26	91	<10		
11/19/2007	GMW-25	<2	<2	26	113	<10		
12/14/2007	GMW-25	<2	<2	35	238	<10		
01/17/2008	GMW-25	<2	<2	33	164	<10		
02/22/2008	GMW-25	<2	<2	63	272	<10		
03/24/2008	GMW-25	<2	<2	66	247	<10		
04/22/2008	GMW-25	<2	<2	16	51	<10		
05/14/2008	GMW-25	<2	<2	10	32	<10		
06/23/2008	GMW-25	<2	<2	13	76	<10		
07/18/2008	GMW-25	<2	<2	28	330	<10		
08/18/2008	GMW-25	<2	<2	74	365	<10		
09/19/08	GMW-25	<2	<2	72	273	<10		
10/27/2008	GMW-25	<2	<2	<2	<5	<10		
11/20/2008	GMW-25	<2	<2	18	75			
12/18/2008	GMW-25	<2	<2	<2	18			
01/19/2009	GMW-25	<2	<2	<2	13			
03/11/2009	GMW-25	<1	<1	2	9			
06/25/2009	GMW-25	<2	7	26	128	<5		
09/17/2009	GMW-25	<2	2	18	346			
11/06/2009	GMW-25	1	<1	2	98	<10		
03/16/2010	GMW-25	1	<1	15	306	<10		
06/17/2010	GMW-25	<0.5	<1	164	388	<10		
10/05/2010	GMW-25	<0.195	<0.195	27	264	<0.722		
12/07/2010	GMW-25	<0.5	<1	10	56	<10		
03/02/2011	GMW-25	<0.5	2	242	715	<10		
06/09/2011	GMW-25	<0.5	<1	91	215	<10		
09/27/2011	GMW-25	<0.5	<1	123	367	<10		
12/09/2011	GMW-25	<0.5	<1	38.9	150	<10		
03/19/2012	GMW-25	<0.5	<1	27.3	44	<10		
09/26/2012	GMW-25	<0.5	<1	176	542	<10		
		average		114	419			
11/23/2004	GMW-26	<2	<2	<2	<5	<5	<5	<5
12/14/2004	GMW-26	<2	<2	<2	<5	<5	<5	<5
01/18/2005	GMW-26	<2	<2	<2	<5	<5	<5	<5
02/28/2005	GMW-26	<2	<2	<2	<5	<5	<5	<5
03/16/2005	GMW-26	<2	<2	<2	<5	<5	<5	<5
04/07/2005	GMW-26	<2	<2	<2	<5	<5	<5	<5
05/24/2005	GMW-26	<2	<2	<2	<5	<5	<5	<5
06/20/2005	GMW-26	<2	<2	<2	<5	<5	<5	<5
04/12/2006	GMW-26	<2	<2	<2	<5	<5	<5	<5
11/23/2004	GMW-27	<2	<2	33	159	<5		
12/14/2004	GMW-27	<2	<2	<2	<5	<5	<5	<5
03/16/2005	GMW-27	<2	<2	61	89	<5	<5	<5
04/12/2006	GMW-27	<2	64	143	548	<5	<5	<5
11/24/2004	GMW-28	<2	<2	<2	<5	<5	<5	<5
12/14/2004	GMW-28	<2	<2	<2	<5	<5	<5	<5
03/16/2005	GMW-28	<2	<2	<2	<5	<5	<5	<5
04/07/2005	GMW-28	<2	<2	<2	<5	<5	<5	<5
05/24/2005	GMW-28	<2	<2	<2	<5	<5	<5	<5
06/20/2005	GMW-28	<2	<2	<2	<5	<5	<5	<5
04/12/2006	GMW-28	<2	<2	<2	<5	<5	<5	<5
11/24/2004	GMW-29	<2	<2	<2	<5	<5	<5	<5
12/14/2004	GMW-29	<2	<2	<2	<5	<5	<5	<5
01/18/2005	GMW-29	<2	<2	<2	<5	<5	<5	<5
02/28/2005	GMW-29	<2	<2	<2	<5	<5	<5	<5
03/16/2005	GMW-29	<2	<2	<2	<5	<5	<5	<5
04/07/2005	GMW-29	<2	<2	<2	<5	<5	<5	<5
05/24/2005	GMW-29	<2	<2	<2	<5	<5	<5	<5
06/20/2005	GMW-29	<2	<2	<2	8	<5		
12/22/2005	GMW-29	<2	<2	<2	<5	<5	<5	<5
03/20/2006	GMW-29	<2	<2	<2	<5	<5	<5	<5
04/12/2006	GMW-29	<2	<2	<2	<5	<5	<5	<5
11/29/2004	GMW-30	<2	<2	<2	<5	<5	<5	<5
12/14/2004	GMW-30	<2	<2	<2	<5	<5	<5	<5
01/18/2005	GMW-30	<2	<2	<2	<5	<5	<5	<5
02/28/2005	GMW-30	<2	<2	<2	454	<5	<5	<5
03/15/2005	GMW-30	10	7	<2	299	<5	<5	<5
03/16/2005	GMW-30	6	<2	<2	240	<5	<5	<5
04/07/2005	GMW-30	4	<2	<2	27	<5	<5	<5
05/24/2005	GMW-30	4	<2	<2	19	<5		
06/20/2005	GMW-30	<2	<2	<2	<5	<5		
08/30/2005	GMW-30	<2	<2	<2	<5	<5		
12/22/2005	GMW-30	<2	<2	<2	<5	<5		
03/20/2006	GMW-30	<2	<2	<2	<5	<5		
09/18/2006	GMW-30	<2	<2	<2	<5	<5		
10/16/2006	GMW-30	<2	<2	<2	<5	<5		
11/13/2006	GMW-30	<2	<2	<2	<5	<5		
12/14/2006	GMW-30	<2	<2	<2	<5	<5		
01/15/2007	GMW-30	<2	<2	<2	<5	<5		
02/15/2007	GMW-30	<2	<2	<2	<5	<5		
03/06/2007	GMW-30	<2	<2	<2	<5	<5		

TABLE 1 GROUNDWATER MONITORING DATA (ug/L) VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
04/16/2007	GMW-30	<2	<2	<2	<5	<5		
05/16/2007	GMW-30	<2	<2	<2	<5	<5		
06/20/2007	GMW-30	<2	<2	<2	<5	<10		
07/16/2007	GMW-30	<2	<2	<2	<5	<10		
08/17/2007	GMW-30	<2	<2	<2	<5	<10		
09/17/2007	GMW-30	<2	<2	<2	<5	<10		
10/22/2007	GMW-30	<2	<2	<2	<5	<10		
11/19/2007	GMW-30	<2	<2	<2	<5	<10		
12/14/2007	GMW-30	<2	<2	<2	<5	<10		
01/17/2008	GMW-30	<2	<2	<2	<5	<10		
02/22/2008	GMW-30	<2	<2	<2	<5	<10		
03/24/2008	GMW-30	2	<2	<2	<5	<10		
04/22/2008	GMW-30	5	<2	<2	<5	<10		
05/14/2008	GMW-30	3	<2	<2	<5	<10		
06/23/2008	GMW-30	2	<2	<2	<5	<10		
07/18/2008	GMW-30	<2	<2	<2	<5	<10		
08/18/2008	GMW-30	<2	<2	<2	<5	<10		
09/19/2008	GMW-30	<2	<2	<2	<5	<10		
10/27/2008	GMW-30	<2	<2	<2	<5	<10		
11/20/2008	GMW-30	5	<2	<2	<5			
12/18/2008	GMW-30	<2	<2	<2	<5			
01/19/2009	GMW-30	<2	<2	<2	<5			
03/11/2009	GMW-30	<1	<1	<1	2			
06/25/2009	GMW-30	<2	<2	6	25	<5		
09/17/2009	GMW-30	<2	<2	7	33			
11/05/2009	GMW-30	<0.5	<1	<1	<4	<10		
11/05/2009	GMW-30	<5	<5	<5	<5		IDNR Split Sample	
12/03/2009	GMW-30	<0.5	<2	<2	<3			
01/05/2010	GMW-30	<0.5	<1	<1	<6	<10		
03/18/2010	GMW-30	<0.5	<1	<1	<7.5	<10		
06/17/2010	GMW-30	<0.5	<1	<1	<3	<10		
10/05/2010	GMW-30	<0.195	<0.196	<0.211	<0.407	<0.722		
12/07/2010	GMW-30	<0.5	<1	<1	<3	<10		
03/02/2011	GMW-30	<0.5	<1	<1	<3	<10		
06/09/2011	GMW-30	<0.5	<1	<1	<3	<10		
09/27/2011	GMW-30	<0.5	<1	<1	<3	<10		
12/09/2011	GMW-30	1.16	<1	1.02	<3	<10		
03/19/2012	GMW-30	<0.5	<1	<1	<3	<10		
09/26/2012	GMW-30	<0.5	<1	<1	3.21	<10		
11/18/2004	GMW-31	<2	<2	<2	<5	<5	<5	<5
12/4/2004	GMW-31	<2	<2	<2	<5	<5	<5	<5
01/18/2005	GMW-31	<2	<2	<2	<5	<5	<5	<5
02/28/2005	GMW-31	<2	<2	<2	<5	<5	<5	<5
03/16/2005	GMW-31	<2	<2	<2	<5	<5	<5	<5
04/07/2005	GMW-31	<2	<2	<2	<5	<5	<5	<5
05/24/2005	GMW-31	<2	<2	<2	<5	<5	<5	<5
06/20/2005	GMW-31	<2	<2	<2	<5	<5	<5	<5
12/22/2005	GMW-31	<2	<2	<2	<5	<5	<5	<5
04/12/2006	GMW-31	<2	<2	<2	<5	<5	<5	<5
12/21/2004	GMW-32	<2	<2	<2	<5	<5		
05/24/2005	GMW-32	<2	<2	<2	<5			
06/20/2005	GMW-32	<2	<2	<2	<5	<50		
12/22/2005	GMW-32	<2	<2	<2	<5	<50		
04/12/2006	GMW-32	<2	<2	<2	<5	<75		
05/16/2006	GMW-33	<20	8520	21100	92300	<50		
06/19/2006	GMW-33	<20	7790	21500	93900	<50		
07/17/2006	GMW-33	<30	4390	8960	43700	<50		
08/21/2006	GMW-33	<20	4320	11500	56400	<50		
09/18/2006	GMW-33	<20	6140	12800	62900	<50		
10/16/2006	GMW-33	<20	4170	12300	56000	<50		
11/13/2006	GMW-33	<20	4960	11600	57700	<50		
12/14/2006	GMW-33	<20	1950	6800	41900	<50		
01/15/2007	GMW-33	<20	3200	9170	48700	<50		
02/15/2007	GMW-33	<20	3510	10100	52400	<50		
03/06/2007	GMW-33	<20	3440	10200	50300	<50		
04/16/2007	GMW-33	<20	822	7100	37300	<50	IDNR sample	
05/16/2007	GMW-33	<20	106	1800	9930	<50		
06/20/2007	GMW-33	<20	1310	5770	23400	<50		
07/16/2007	GMW-33	<20	1270	3080	14900	<50		
07/31/2007	GMW-33	7	683	2720	12800	<50		
07/31/2007	GMW-33	<100	990	3800	18000	<50		
08/01/2007	GMW-33	<20	855	2400	11500	<10		
08/07/2007	GMW-33	<20	1090	2390	12800	<10		
08/17/2007	GMW-33	<20	893	3160	14000	<100		
08/28/2007	GMW-33	<20	755	2290	13300	<100		
09/28/2007	GMW-33	9	550	1850	12400	<100		
10/22/2007	GMW-33	13	1320	3470	12600	<100		
11/19/2007	GMW-33	<20	748	2190	10400	<100		
12/14/2007	GMW-33	<2	146	584	2750	<10		
01/17/2008	GMW-33	<2	33	245	658	<10		
02/22/2008	GMW-33	<2	74	832	2300	<10		
03/24/2008	GMW-33	3	28	1100	1680	<10		
05/14/2008	GMW-33	<2	3	98	215	<10		
06/23/2008	GMW-33	<2	15	169	481	<10		
07/18/2008	GMW-33	<2	11	215	674	<10		
08/18/2008	GMW-33	<2	5	223	463			
09/19/2008	GMW-33	5	437	3230	13600			
10/27/2008	GMW-33	4	385	2380	10600			
11/20/2008	GMW-33	2	148	980	3670			
12/18/2008	GMW-33	<2	33	399	1190			
01/19/2009	GMW-33	<2	36	351	909			
03/11/2009	GMW-33	<1	4	51	167			

TABLE 1								
GROUNDWATER MONITORING DATA (ug/L)								
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
03/11/2009	GMW-33	<2	<2	5	22			
06/25/2009	GMW 33	<2	20	241	698	<5		
09/17/2009	GMW 33	<2	3	151	266	<5		
11/06/2009	GMW-33	1	4	196	337	<10		
03/18/2010	GMW-33	<0.5	4	2	<7.5	<10		
06/17/2010	GMW-33	<0.5	<1	2	4	<10		
10/05/2010	GMW-33	<0.195	<0.196	<0.211	<0.407	<0.722		
12/07/2010	GMW-33	<0.5	<1	<1	<3	<10		
03/02/2011	GMW-33	<0.5	<1	<1	<3	<10		
06/09/2011	GMW-33	<0.5	<1	<1	4	<10		
09/27/2011	GMW-33	<0.5	<1	<1	<3	<10		
12/09/2011	GMW-33	<0.5	<1	1.09	5.76	<10		
03/19/2012	GMW-33	<0.5	<1	58.5	304	<10		
09/26/2012	GMW-33	0.71	<1	61.1	273			
		Average		4035	19166			
05/16/2006	GMW 34	<2	<2	<2	<5	<5	<5	<5
06/19/2006	GMW-34	<2	<2	<2	<5	<5		
07/17/2006	GMW-34	<2	<2	<2	<5	<5		
08/21/2006	GMW-34	<2	<2	<2	<5	<5	<5	<5
09/18/2006	GMW 34	<2	<2	<2	<5	<5	<5	<5
11/13/2006	GMW 34	<2	<2	<2	<5	<5	<5	<5
11/19/2007	GMW-34	<2	<2	<2	<5	<5		
11/20/2008	GMW 34	<2	<2	<2	<5	<5		
11/06/2009	GMW 34	<0.5	<1	<1	<4	<10	<5	<5
10/05/2010	GMW-34	1	<0.196	192	928	<0.722		
11/05/2010	GMW-34	2	<1	258	1010	<10		
12/07/2010	GMW-34	10	<1	4340	12500	<10		
03/02/2011	GMW-34	3	<1	1350	3770	<10		
06/09/2011	GMW-34	<2.5	<5	406	1120	<50		
09/27/2011	GMW-34	<0.5	<1	<1	<3	<10		
12/09/2011	GMW-34	<0.5	<1	<1	<3	<10		
03/19/2012	GMW-34	<0.5	<1	<1	<3	<10		
09/26/2012	GMW-34	<0.5	<1	<1	<3	<10		
03/24/2004	MW-1	<2	<2	<2	<5	<5		
06/25/2004	MW-1	<2	<2	<2	<5	<5		
09/27/2004	MW 1	<2	<2	<2	<5	<5	<5	<5
12/14/2004	MW-1	<2	<2	<2	<5	<5	<5	<5
03/16/2005	MW 1	<2	<2	<2	<5	<10		
06/20/2005	MW-1	<2	<2	<2	<5	<10		
12/22/2005	MW-1	<2	<2	<2	<5	<10		
11/19/2007	MW-1	<2	<2	<2	<5	<10	<5	<5
05/14/2008	MW-1	<2	<2	<2	<5	<10	<5	<5
08/07/2008	MW-1	<2	<2	<2	<5			
08/27/2008	MW-1	<2	<2	<2	<5			
10/27/2008	MW-1	<2	<2	<2	<5			
11/20/2008	MW 1	<2	<2	<2	<5	<10		
05/12/2009	MW-1	<2	<2	<2	<3			
06/25/2009	MW-1	<2	<2	<2	<3	<5		
09/17/2009	MW-1	<2	<2	<2	<3	<5		
11/06/2009	MW 1	<0.5	<1	<1	<4	<5		
09/27/2011	MW-1	<0.5	<1	<1	<3	<10		
09/26/2012	MW-1	<0.5	<1	<1	<3	<10		
03/24/2004	MW 5	<2	<2	<2	<5	<5		
06/25/2004	MW 5	<2	<2	<2	<5	<5		
09/27/2004	MW-5	<2	<2	<2	<5	<5		
12/14/2004	MW-5	<2	<2	<2	<5	<5		
03/16/2005	MW-5	<2	<2	<2	<5	<5		
06/20/2005	MW-5	<2	<2	<2	<5			
12/22/2005	MW 5	<2	<2	<2	<5			
11/13/2006	MW 5	<2	<2	<2	<5	<10	<50	<50
11/19/2007	MW-5	<2	<2	<2	<5	<50	<50	<50
11/20/2008	MW-5	<2	<2	<2	<5	<50	<50	<50
06/25/2009	MW-5	<2	<2	<2	<3	<50	<50	<50
11/06/2009	MW 5	<0.5	<1	<1	<4	<50	<50	<50
09/27/2011	MW-5	<0.5	<1	<1	<3	<10		
09/26/2012	MW-5	<0.5	<1	<1	<3	<10		
01/03/2001	TC-6D	5	19	2100	6110	<50	<50	<50
03/27/2001	TC-6D	2	21	2840	7110	<50	<50	<50
06/29/2001	TC-6D	24	95	8700	17300	<50	<50	<50
10/17/2001	TC-6D	65	580	15200	45700	<5	<50	<50
12/14/2001	TC-6D	<20	270	10900	28400	<50	<50	<50
03/29/2002	TC-6D	<20	<20	9790	20500	<50	<50	<50
06/27/2002	TC-6D	<20	102	9550	14800	<50	<50	<50
09/26/2002	TC-6D	15	370	10100	25900	<50	<50	<50
12/11/2002	TC 6D	<2	<2	230	483	<50	<50	<50
03/26/2003	TC-6D	<20	116	1400	34300	<50	<50	<50
06/12/2003	TC-6D	<20	180	11900	19800	<50	<50	<50
08/15/2003	TC-6D	<20	127	6970	17900	<50	<50	<50
12/02/2003	TC6D	<20	151	4870	11900	<50	<50	<50
03/24/2004	TC6D	<20	<20	9820	15200	<50	<50	<50
06/25/2004	TC6D	<2	<2	3960	4580	<50		
09/27/2004	TC6D	<2	<2	1010	1180	<50		
12/14/2004	TC6D	<2	<2	28	43	<50		
12/30/2004	TC6D	<2	<2	23	58	<50		
01/18/2005	TC6D	<2	<2	49	85	<50		
02/28/2005	TC6D	<2	31	4220	7730	<50		
03/16/2005	TC6D	<2	<2	7170	19800	<50		
04/07/2005	TC6D	13	19	6260	10700	<50		
05/24/2005	TC6D	<20	<20	7230	14100	<50		
06/20/2005	TC6D	<20	<20	8030	15600	<50		
08/12/2005	TC6D	<20	<20	11740	17990	<50		

TABLE 1							
GROUNDWATER MONITORING DATA (ug/L)							
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012							
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2
Limits		5	1000	700	10000	400	
09/29/2005	TC6D	<20	<20	11200	22500	<50	
10/24/2005	TC6D	<20	<20	12600	33300	<50	
12/22/2005	TC6D	<20	186	15300	46100	<50	
03/20/2006	TC6D	<20	186	10500	30300	<50	
05/19/2006	TC6D	<20	<20	14900	44200	<100	
09/18/2006	TC6D	<20	<20	9260	24800	<100	<5
11/13/2006	TC6D	<20	<20	9070	23800	<100	<5
03/06/2007	TC6D	<20	<20	5670	12600	<10	<5
06/20/2007	TC6D	<20	<20	5320	12500	<10	<5
11/19/2007	TC6D	<20	82	6620	24100	<5	<5
03/24/2008	TC6D	<20	26	8630	28100	<5	<5
06/23/2008	TC6D	<20	426	8880	31300	<5	<5
09-19-08	TC6D	15	240	10200	41400		
11/20/2008	TC6D	14	335	8850	35000	<5	
03/11/2009	TC6D	<25	860	16450	65770	<5	
06/25/2009	TC6D	18	292	11800	32100		
09/17/2009	TC6D	17	186	14700	56500		
11/05/2009	TC6D	18	131	18700	75200	<100	
03/18/2010	TC6D	16	26	17700	60900	<10	
06/17/2010	TC6D	<50	<100	16900	58400	<1000	
10/05/2010	TC6D	<50	<100	22300	79800	<72.2	
12/07/2010	TC6D	17	63	19200	74100	<100	
03/02/2011	TC6D	<50	<100	17100	67300	<1000	
06/09/2011	TC6D	<50	<100	16800	61800	<1000	
09/27/2011	TC6D	<50	<100	13500	54200	<1000	
12/09/2011	TC6D	<50	<100	16200	55000	<1000	
03/19/2012	TC6D	<50	<100	15700	54300	<1000	
09/26/2012	TC-6D	<50	<100	14900	54200	<1000	
				9869	30506		
06/27/2002	TC-6S	<2	<2	<2	24	<5	<5
09/26/2002	TC-6S	<2	<2	<2	<5	<5	
12/11/2002	TC-6S	<2	<2	<2	<5	<5	
03/26/2003	TC-6S	<2	<2	<2	<5	<5	<5
06/12/2003	TC-6S	<2	<2	<2	<5	<5	<5
08/15/2003	TC-6S	<2	<2	<2	<5	<5	<5
12/02/2003	TC-6S	<2	<2	<2	<5	<5	<5
03/24/2004	TC-6S	<2	<2	<2	<5	<5	<5
06/25/2004	TC-6S	<2	<2	<2	<5	<5	
09/27/2004	TC-6S	<2	<2	<2	<5	<5	
12/14/2004	TC-6S	<2	<2	<2	<5	<5	
03/16/2005	TC-6S	<2	<2	<2	<5	<5	
06/20/2005	TC-6S	<2	<2	<2	<5		
12/22/2005	TC-6S	<2	<2	<2	<5	<5	
11/13/2006	TC-6S	<2	<2	<2	<5	<5	
11/19/2007	TC-6S	<2	<2	<2	<5	<5	
11/20/2008	TC-6S	<2	<2	<2	<5	<5	
11/20/2008	TC-6S	<0.5	<1	<1	<4	<10	
10/05/2010	TC-6S	<0.195	<0.196	<0.211	1	<0.722	
09/27/2011	TC-6S	<0.5	<1	<1	<3	<10	
03/24/2004	TC-7	<2	<2	<2	<5	<5	
06/25/2004	TC-7	<2	<2	<2	<5	<5	
09/27/2004	TC-7	<2	<2	<2	<5	<5	
12/14/2004	TC-7	<2	<2	<2	<5	<5	
03/16/2005	TC-7	<2	<2	<2	<5	<5	
06/20/2005	TC-7	<2	<2	<2	<5		
12/22/2005	TC-7	<2	<2	<2	<5	<5	
11/13/2006	TC-7	<2	<2	<2	<5	<5	
11/19/2007	TC-7	<2	<2	<2	<5	<5	
11/20/2008	TC-7	<2	<2	<2	<5	<5	
11/05/2009	TC-7	<0.5	<1	<1	<4	<10	
11/05/2009	TC-7	<5	<5	<5	<5		IDNR Split Sample
10/05/2010	TC-7	<0.195	<0.196	<0.211	<0.407	<0.722	
09/27/2011	TC-7	1.75	49	166	172	<10	
03/19/2012	TC-7	<0.5	<1	188	329	<10	
09/26/2012	TC-7	<0.5	<1	<1	<3	<10	
03/29/2002	TC-17S	<2	<2		<5	<5	
06/27/2002	TC-17S	<2	<2		10	<5	
09/26/2002	TC-17S	<2	<2		<5	<5	
12/1/2002	TC-17S	<2	<2		<5	<5	
03/26/2003	TC-17S	<2	<2		<5		
06/12/2003	TC-17S	<2	<2		<5	<5	
08/15/2003	TC-17S	<2	<2		<5	<5	
05/16/2007	TC-17S	<2	<2		<5	<5	
07/16/2007	TC-17S	<2	<2		<5	<5	
03/24/2004	TC22D	<2	<2	<2	<2	<5	
06/25/2004	TC22D	<2	<2	<2	<2	<5	
09/27/2004	TC22D	<2	<2	<2	<2	<5	
12/14/2004	TC22D	<2	<2	<2	<2	<5	
03/16/2005	TC22D	<2	<2	<2	<2	<10	
06/20/2005	TC22D	<2	<2	<2	<2		
12/22/2005	TC22D	<2	<2	<2	<2	<5	
11/13/2006	TC22D	<2	<2	<2	<2		
06/20/2007	TC22D	<2	<2	<2	<2	<5	
11/20/2008	TC22D	<2	<2	6	46	<5	
10/05/2010	TC22D	<0.195	<0.196	<0.211	<0.407	<0.722	
11/19/2007	TC22S	<2	<2	<2	<2	<5	
11/06/2009	TC22S	<0.5	<1	<1	<4	<10	
09/27/2011	TC22S	<0.5	<1	<1	<3	<10	
05/15/1986	TC-23		<1	<1	<1	<5	

TABLE 1 GROUNDWATER MONITORING DATA (ug/L)								
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
08/20/1986	TC-23		<1	<1	3	<15		
11/25/1986	TC-23		<1	<1	<1	<15		
02/17/1987	TC-23		<1	<1	<1	<20		
06/15/1987	TC-23		12	<1	<1	<15		
09/02/1987	TC-23	<5	<1	<1	<1	<15		
12/17/1987	TC-23	<1	<1	<1	<1	<15		
04/07/1988	TC-23	<1	<1	<1	<1	<20		
07/19/1988	TC-23		<1	<1	<1	<15		
10/12/1988	TC-23		<1	<1	<1	<15		
01/18/1989	TC-23		<1	<1	<1	<15		
04/12/1989	TC-23		<1	<1	<1	<15		
07/24/1989	TC-23		<2	<2	<5	<15		
10/17/1989	TC-23		<2	<2	<5	<3		
01/10/1990	TC-23		<2	<2	<5	10		
07/31/1990	TC-23		<2	<2	<5	<5		
07/24/1991	TC-23		<2	<2	<5	<3		
11/12/1991	TC-23		<2	<2	<5	<3		
03/24/1992	TC-23	<1	<1	<1	<1	<5		
03/26/1992	TC-23	<1	<1	<1	<1	<5		
06/18/1992	TC-23	<5	<5	<5	<10	<5		
12/30/1992	TC-23	<1	<1	<1	<1	<5		
03/30/1993	TC-23	<1	6	<1	<1	<5		
06/08/1993	TC-23	<5	<5	<5	<10	<5		
03/23/1994	TC-23	<2	<2	<2	<5	<5		
06/29/1994	TC-23	<2	<2	<2	<5	<5		
09/27/1994	TC-23	<2	<2	<2	<5	<5		
11/23/1994	TC-23	<2	<2	<2	<5	<5		
02/24/1995	TC-23	<2	<2	<2	<5	<5		
06/29/1995	TC-23	<2	<2	<2	<5	<5		
09/27/1995	TC-23	<2	<2	<2	<5	<5		
12/04/1995	TC-23	<2	<2	<2	<5	<5		
02/28/1996	TC-23	<2	<2	<2	<5	<5		
07/02/1996	TC-23	<2	<2	<2	<5	<5		
09/30/1996	TC-23	<2	<2	<2	<5	<5		
03/26/1997	TC-23	<2	<2	<2	<5	<5		
06/17/1997	TC-23	<2	<2	<2	<5	<5		
08/28/1997	TC-23	<2	<2	<2	<5	<5		
11/12/1997	TC-23	<2	<2	2	<5	<5	<5	<5
03/20/1998	TC-23	<2	<2	<2	<5	<5	<5	<5
06/17/1998	TC-23	<2	<2	<2	<5	<5	<5	<5
09/17/1998	TC-23	<2	<2	<2	<5	<5	<5	<5
12/15/1998	TC-23	<2	<2	<2	<5	<5	<5	<5
03/26/1999	TC-23	<2	<2	<2	<5	<5	<5	<5
06/23/1999	TC-23	<2	<2	<2	<5	<5	<5	<5
09/29/1999	TC-23	<2	<2	<2	<5	<5	<5	<5
12/23/1999	TC-23	<2	<2	6	10	<5	<5	<5
03/29/2000	TC-23	<2	<2	<2	<5	<5	<5	<5
07/21/2000	TC-23	<2	<2	<2	<5	<5	<5	<5
01/03/2001	TC-23	<2	<2	<2	<5	<5	<5	
03/27/2001	TC-23	<2	<2	<2	<5	<5	<5	
06/29/2001	TC-23	<2	<2	<2	<5	<5	<5	
10/04/2001	TC-23	<2	<2	<2	<5	<5	<5	
12/14/2001	TC-23	<2	<2	<2	<5	<5	<5	
03/29/2002	TC-23	<2	<2	<2	<5	<5	<5	
06/27/2002	TC-23	<2	<2	<2	<5	<5	<5	
09/26/2002	TC-23	<2	<2	<2	<5	<5	<5	
12/11/2002	TC-23	<2	<2	<2	<5	<5	<5	
03/26/2003	TC-23	<2	<2	<2	<5	<5	<5	
06/12/2003	TC-23	<2	<2	<2	<5	<5	<5	
08/14/2003	TC-23	<2	<2	<2	<5	<5	<5	
12/02/2003	TC-23	<2	<2	<2	<5	<5	<5	
03/24/2004	TC-23	<2	<2	<2	<5	<5	<5	
06/25/2004	TC-23	<2	<2	<2	<5	<5	<5	
09/27/2004	TC-23	<2	<2	<2	<5	<5	<5	
12/14/2004	TC-23	<2	<2	<2	<5	<5	<5	
03/16/2005	TC-23	<2	<2	<2	<5	<5	<5	
06/20/2005	TC-23	<2	<2	<2	<5	<5	<5	
12/22/2005	TC-23	<2	<2	<2	<5	<5	<5	
11/23/2006	TC-23	<2	<2	5	24			
11/19/2007	TC-23	<2	<2	<2	6			
11/20/2008	TC-23	<2	<2	46	252			
11/06/2009	TC-23	<0.5	<1	<1	<4	<10		
10/05/2010	TC-23	<0.195	<0.196	<0.211	<0.407	<0.722		
09/27/2011	TC-23	<0.5	<1	<1	<3	<10		
09/26/2012	TC-23	<0.5	<1	<1	<3	<10		
06/18/1992	RW-102	8	3380	1190	10100	530		
10/13/1992	RW-102	72	13100	21600	81800	510		
12/30/1992	RW-102	8	1190	3380	10100	1100		
03/30/1993	RW-102	26	2410	4940	17200	390		
09/30/1993	RW-102	20	9820	4200	20500	460		
03/23/1994	RW-102	<2	3130	1580	9730	920		
09/27/1994	RW-102	22	8530	4440	21900	2450		
11/23/1994	RW-102	12	4640	2320	19200	270		
06/29/1995	RW-102	<40	2780	1440	8950	520		
09/27/1995	RW-102	11	8990	3980	21600	170		
12/04/1995	RW-102	39	16200	31	39200	470		
02/28/1996	RW-102	<20	1290	3930	16300	370		
07/02/1996	RW-102	13	2180	4360	15500	<50		
09/30/1996	RW-102	32	5910	14700	38600	<10		
06/22/1998	RW-102	19	8180	11200	43400	<10		
09/17/1998	RW-102	27	4750	12500	51300	<10		
06/29/1999	RW-102	11	9690	7160	28900	<10		
08/14/2003	RW-102	<20	1020	3290	13400	<10		
06/23/2008	RW-102	11	1220	4630	19300	25		

TABLE 1							
GROUNDWATER MONITORING DATA (ug/L)							
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012							
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2
Limits		5	1000	700	10000	400	
06/26/2008	RW-102	<20	1110	4200	17200	<10	
07/11/2008	RW-102	<2	2240	7040	28600		
08/07/2008	RW-102	<2	1820	5840	20900		
08/27/2008	RW-102	<20	3590	7940	31900		
09/19/2008	RW-102	<2	3130	9190	35600		
10/27/2008	RW-102	10	2930	7170	31100		
05/12/2009	RW-102	9	1440	9390	35000	<3	
06/25/2009	RW-102	12	2490	8210	25400	<15	
09/17/2009	RW-102	10	2160	6770	22800	27	
	Average		4619	6315	26267		
						<2	
06/18/1992	RW-104	<1	9	4	5760	<2	
12/30/1992	RW-104	6	333	1250	4300	<5	
03/30/1993	RW-104	10	490	1660	5750	<2	
09/30/1993	RW-104	8	540	150	1190	<2	
03/23/1994	RW-104	10	460	40	1490	<5	
09/27/1994	RW-104	<2	31	<2	63	<5	
11/23/1994	RW-104	2	200	28	640	<2	IDNR sample
06/29/1995	RW-104	14	930	180	3070	<5	
09/27/1995	RW-104	7	3	<2	12	72	
12/04/1995	RW-104	5	3	<2	7	9	
02/28/1996	RW-104	4	170	610	2110	<5	
07/02/1996	RW-104	3	70	270	937	<50	
09/30/1996	RW-104	3	40	250	760	<50	
06/22/1998	RW-104	15	1210	5160	19200	<50	
09/17/1998	RW-104	11	1430	6290	15400	<50	
06/29/1999	RW-104	3	140	770	* 2680	<50	
08/01/2003	RW-104+5	17	540	5810	12800	<50	
08/07/2003	RW-104+5	6	270	3690	12500	<50	
08/14/2003	RW-104	7	338	4260	14010	<50	
06/20/2007	RW-104	<20	197	8870	29300	<50	
06/21/2007	RW-104	<20	168	2150	9490	<50	
07/31/2007	RW-104	14	497	6490	21500	<50	
07/31/2007	RW-104	<100	740	8500	27000	<100	
08/01/2007	RW-104	<20	725	6070	20200	<100	
08/07/2007	RW-104	<20	639	6420	23700	<100	
08/17/2007	RW-104	18	424	8600	33500	<100	
08/28/2007	RW-104	<20	711	9040	30000	<100	
09/28/2007	RW-104	<20	484	4280	17000	<10	
10/22/2007	RW-104	<20	502	8200	32700	<10	
05/14/2008	RW-104	<20	136	9800	37200		
07/11/2008	RW-104	<2	1150	11700	45100		
08/27/2008	RW-104	<20	471	5250	20100		
09/19/2009	RW-104	15	586	7840	29000		
10/27/2009	RW-104	15	542	7010	27900		
05/12/2009	RW-104	17	455	15500	48700		
06/25/2009	RW-104	<40	1030	10300	28700		
09/17/2009	RW-104	19	1030	9890	29200		
	Average		478	5186	16567		
CREEK SAMPLES							
11/06/2009	UP STREAM	<0.500	<1	<1	<4	<10	
01/13/2011	UP STREAM	<0.500	<1	<1	<3	<10	
11/06/2009	ON SITE	<0.500	<1	<1	<4	<10	
01/13/2011	ON SITE	<0.500	<1	1	<3	<10	
11/06/2009	DOWN STREAM	<0.500	<1	<1	<4	<10	
01/13/2011	DOWN STREAM	<0.500	<1	<1	<3	<10	
PHYTO REMEDIANTION SYSTEM MONITORING WELL LOCATIONS							
04/16/2007	MP 1	<2	220	1280	15900	<5	
07/31/2007	MP-1	10	5920	38400	15900	<100	
08/01/2007	MP-1	<2	737	3870	28400	<10	
08/07/2007	MP-1	<2	2	12	250	<10	
08/7/2007	MP-1	<2	6	75	734		
08/28/2007	MP-1	<2	16	27	871		
11/19/2007	MP-1	3	202	2150	12000		
05/14/2008	MP 1	<2	<2	15	280		
10/27/2008	MP-1	<2	4	90	350	<5	
05/12/2009	MP-1	<2	22	1150	3880	<5	
07/08/2009	MP-1	<2	<2	48	209	<5	
09/17/2009	MP-1	6	474	4140	13600	<5	
			634	4271	7698	<5	
04/16/2007	MP-3	<2	74	194	811	<5	
07/31/2007	MP-3	<2	<2	335	527	<5	
08/01/2007	MP-3	<2	5	294	713	<10	
08/07/2007	MP-3	<2	<2	14	88	<10	
08/1/2007	MP-3	<2	<2	3	9		
08/28/2007	MP-3	<2	<2	<2	<2		
11/19/2007	MP-3	<2	<2	692	841		
05/14/2008	MP-3	<2	<2	271	715		
10/27/2008	MP-3	<2	<2	428	849	<5	
05/12/2009	MP-3	<2	<2	91	168	<5	
07/08/2009	MP-3	<2	<2	244	493	<5	
09/17/2009	MP-3	<2	13	476	1290	<5	
				254	542		
05/16/2007	P-1	<2	22	216	753	<5	
06/01/2007	P-1	<2	<2	<2	45	<5	
07/16/2007	P-1	<2	<2	62	169	<5	
07/31/2007	P-1	<2	<2	468	562	<10	

TABLE 1 GROUNDWATER MONITORING DATA (ug/L) VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012								
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2	1,2-DCP
Limits		5	1000	700	10000	400		
08/01/2007	P 1	<2	<2	292	403	<10		
08/07/2007	P 1	<2	<2	<2	58	<10		
08/17/2007	P 1	<2	<2	<2	24	<10		
08/28/2007	P 1	<2	<2	<2	<5	<10		
11/19/2007	P 1	<2	<2	47	13			
05/14/2008	P 1	<2	<2	19	6			
07/11/2008	P 1	<2	<2	26	<5			
08/27/2008	P 1	<2	<2	25	<5			
10/27/2008	P 1	<2	<2	<2	7	<5		
05/12/2009	P 1	<2	<2	<2	<3	<5		
07/09/2009	P 1	<2	<2	<2	<3	<5		
09/17/2009	P 1	<2	<2	<2	<3	<5		
						<5		
07/16/2007	P 2	<2	<2	<2	<5	<5		
07/31/2007	P 2	<2	<2	<2	<5	<5		
08/01/2007	P 2	<2	<2	<2	<5	<10		
08/07/2007	P 2	<2	<2	<2	<5	<10		
08/17/2007	P 2	<2	<2	<2	<5	<10		
08/28/2007	P 2	<2	<2	<2	<5	<10		
11/19/2007	P 2	<2	<2	<2	<5			
05/14/2008	P 2	<2	<2	<2	<5			
07/11/2008	P 2	<2	<2	<2	<5			
08/27/2008	P 2	<2	<2	<2	<5			
10/27/2008	P 2	<2	<2	<2	<5	<10		
05/12/2009	P 2	<2	<2	<2	<3	<10		
07/09/2009	P 2	<2	<2	<2	<3	<10		
09/17/2009	P 2	<2	<2	<2	<3	<10		
06/23/2008	P 3	<2	2	35	228			
07/11/2008	P 3	<2	2	8	34			
08/07/2008	P 3	<2	<2	17	33			
08/27/2008	P 3	<2	<2	7	35			
10/27/2008	P 3	<2	<2	9	11	<10		
05/12/2009	P 3	<2	<2	72	68	<10		
07/09/2009	P 3	<2	<2	2	4	<10		
09/17/2009	P 3	<2	<2	<2	4	<10		
06/23/2008	P 4	<2	<2	<2	7			
07/11/2008	P 4	<2	<2	<2	<5			
08/07/2008	P 4	<2	<2	<2	<5			
08/27/2008	P 4	<2	<2	<2	<5	<10		
10/27/2008	P 4	<2	<2	<2	<5	<10		
05/12/2009	P 4	<2	<2	<2	7	<10		
07/09/2009	P 4	<2	<2	<2	<3	<10		
09/17/2009	P 4	<2	<2	<2	<3	<10		
06/23/2008	P 5	<2	<2	<2	<5			
07/11/2008	P 5	2	<2	<2	<5			
08/07/2008	P 5	2	<2	<2	<5			
08/27/2008	P 5	2	<2	<2	<5			
10/27/2008	P 5	<2	3	<2	10	<10		
05/12/2009	P 5	<2	<2	<2	7	<10		
07/09/2009	P 5	<2	<2	<2	<3	<10		
09/17/2009	P 5	3	<2	2	12			
06/23/2008	P 6	<2	<2	<2	<5			
07/11/2008	P 6	<2	<2	<2	<5			
08/07/2008	P 6	<2	<2	<2	<5			
08/27/2008	P 6	<2	<2	<2	<5			
10/27/2008	P 6	<2	<2	<2	<5			
05/12/2009	P 6	<2	<2	<2	5	<10		
07/09/2009	P 6	<2	<2	<2	<3	<10		
09/17/2009	P 6	8	27	126	<10			
04/16/2007	L 1	50	10600	23300	94400	<50		
05/16/2007	L-1	<20	8090	18100	76900	<50		
07/16/2007	L-1	<20	7590	15200	69000	<100		
11/19/2007	L-1	34	5430	10200	50800	<100		
						<100		
04/16/2007	U-1	35	8150	22200	84000			
05/16/2007	U-1	<20	7150	18300	71400			
07/16/2007	U-1	<20	5920	14800	62300	<5		
08/28/2007	U 1	<20	5160	16200	61500			
11/19/2007	U-1	22	4270	10200	46100			
05/14/2008	U-1	28	6740	15500	67100			
10/27/2008	U-1	29	5200	11200	51600	<5		
05/12/2009	U-1	33	6640	15300	54000			
07/09/2009	U-1	27	5440	15200	60800	<5		
09/17/2009	U 1	35	1290	1860	8970	<5		
04/16/2007	L-5	<2	50	559	2820	<10		
						<10		
04/16/2007	U-5	<2	505	1570	7120			
04/16/2007	U-7	<2	398	1070	5530	<5		
08/28/2007	U-7	<2	139	290	2150			
11/19/7	U 7	<2	37	114	426			
05/14/2008	U 7	2	390	1110	5220			
10/27/2008	U-7	<2	183	366	2140			
05/12/2009	U 7	3	623	1950	10600	<10		
07/09/2009	U 7	<20	146	369	1980			
09/17/2009	U-7	<2	<2	9	48	<10		
04/16/2007	L-8	<2	388	1070	5770			
11/19/2007	L-8	dry				<10		

TABLE 1							
GROUNDWATER MONITORING DATA (ug/L)							
VOGEL QUARTERLY & MONTHLY MONITORING THROUGH 9/26/2012							
DATE	WELL #	BENZENE	TOLUENE	E-BENZENE	XYLENES	MEK	CH2CL2
Limits		5	1000	700	10000	400	
08/07/2008	U-11	<2	437	6710	35600		
08/27/2008	U-11	Dry				<10	
10/27/2008	U-11	<2	5	4	311	<10	
05/12/2009	U-11	<2	199	4970	24600	<10	
07/08/2009	U-11	<2	106	251	1080		
05/14/2008	U-13	<2	26	1230	2250	<10	
							IDNR sample
08/07/2008	U-15	<2	141	3920	12000		
08/27/2008	U-15	<2	151	3940	12300		
10/27/2008	U-15	<2	31	2750	9300	<10	
05/12/2009	U-15	<2	11	667	2650	<10	
07/08/2009	U-15	<2	6	52	233	<10	
09/17/2009	U-15	2	53	3640	9720		
							DNR
05/14/2008	U-17	<2	<2	140	369	<5	
08/07/2008	U-19	<2	<2	16	63		
08/27/2008	U-19	<2	<2	16	59	<5	
10/27/2008	U-19	<2	<2	<2	<5	<5	
05/12/2009	U-19	<2	<2	<2	5	<5	
07/08/2009	U-19	<2	16	12	392	<5	
09/17/2009	U-19	<2	<2	<2	7	<10	
						<10	
07/31/2007	RW-104 Irr.	<2	8	98	276	<10	
07/31/2007	RW-104 Irr.	<2	9	94	330	<10	
08/07/2007	RW-104 Irr.	5	214	1900	7680	<10	
08/17/2007	RW-104 Irr.	<2	90	725	3570		
08/28/2007	RW-104 Irr.	<2	<2	13	51		
09/17/2007	RW-104 Irr.	<2	33	376	1740		
07/11/2008	RW-104 Irr.	<2	14	53	208		
08/27/2008	RW-104 Irr.	<2	12	171	375		
08/27/2008	RW-104 Irr.	<4	12	190	480		
09-19-08	RW-104 Irr.	<2	3	25	115	<10	
06/25/2009	RW-104 Irr.	<2	33	329	1010	<10	
09/17/2009	RW-104 Irr.	<2	18	169	642	<10	
	Average		41	345	1373		
06/26/2008	RW-102 Irr.	<2	7	30	102		
07/11/2008	RW-102 Irr.	<2	9	95	380		
08/07/2008	RW-102 Irr.	<2	109	368	1280		
08/27/2008	RW-102 Irr.	<2	40	140	535	<5	
09-19-08	RW-102 Irr.	<2	86	230	930	<5	
06/25/2009	RW-102 Irr.	<2	47	165	617	<5	
09/17/2009	RW-102 Irr.	<2	32	123	487	<5	
			47	164	619		
QA/QC DUPLICATE SAMPLES							
06/25/2004	Trip Blank	<2	<2	<2	<5	<5	
09/27/2004	Trip Blank	<2	<2	<2	<5	<5	
12/14/2004	Trip Blank	<2	<2	<2	<5	<5	
03/16/2005	Trip Blank	<2	<2	<2	<5	<5	
05/24/2005	Trip Blank	<2	<2	<2	<5	<5	
06/20/2005	Trip Blank	<2	<2	<2	<5	<5	
08/30/2005	Trip Blank	<2	<2	<2	<5	<5	
09/29/2005	Trip Blank	<2	<2	<2	<5	<5	
10/24/2005	Trip Blank	<2	<2	<2	<5	<5	
12/02/2005	Trip Blank	<2	<2	<2	<5	<5	
12/22/2005	Trip Blank	<2	<2	<2	<5		
1/13/2006	Trip Blank	<2	<2	<2	<5		
03/06/2007	Trip Blank	<2	<2	<2	<5		
06/20/2007	Trip Blank	<2	<2	<2	<5		
11/19/2007	Trip Blank	<2	<2	<2	<5	<5	
03/24/2008	Trip Blank	<2	<2	<2	<5	<5	
06/23/2008	Trip Blank	<2	<2	<2	<5	<5	
09/17/2009	Trip Blank	<2	<2	<2	<5	<5	
11/06/2009	Trip Blank	<0.500	<1	<1	<4	<10	
03/24/2004	Split Sample	<2	<2	83	90	<5	
03/24/2004	GMW 19	<2	<2	104	120	<5	
06/25/2004	Split Sample	<2	<2	275	622	<5	
06/25/2004	GMW-15	<2	<2	294	673	<5	
09/27/2004	Split Sample	<2	<2	<2	<5	<5	
09/27/2004	GMW 7R	<2	<2	<2	<5	<5	
12/14/2004	Split Sample	7	51	4060	13700	<5	
12/14/2004	GMW-21	<2	<2	2380	12600	<5	
03/16/2005	Split Sample	<2	<2	53	52	<5	
03/16/2005	GMW-27	<2	<2	61	89	<5	
05/24/2005	Split Sample	<2	<2	1700	5180	<5	
05/24/2005	GMW 21	<2	24	1890	4900	<5	
06/20/2005	Split Sample	<2	<2	645	1640	<5	
06/20/2005	GMW-21	<2	<2	1020	3310	<50	
12/22/2005	Split Sample	<2	<2	1770	5340	<50	
12/22/2005	GMW-7R	<2	<2	1530	4610	<5	
03/20/2006	Split Sample	<2	<2	1280	2640		
03/20/2006	GMW-21	<2	<2	1020	2190	<50	
06/19/2006	Split Sample	<2	<2	20	56	<50	
06/19/2006	GMW-20	<2	<2	8	17	<5	
09/18/2006	Split Sample	<20	<20	8710	23800	<5	
09/18/2006	TC-6D	<20	<20	9260	24800	<100	
11/13/2006	Split Sample	<2	<2	594	1330	<100	
11/13/2006	GMW-20	<2	<2	493	1040	<100	

TABLE 2 HEAVY METALS GROUNDWATER DATA FROM VOGEL SITE in mg/l							
DATE	WELL #	ARSENIC	CADMIUM	CHROMIUM	LEAD	MERCURY	NOTE
IDNR	MCL	0.01000	0.00500	0.10000	0.01500	0.00200	
IDNR	NPG	0.05000	0.02500	0.50000	0.07500	0.01000	
06/29/2000	B-2	0.00000	0.00000	0.00000	0.00400	0.00260	Center of metals area*
12/23/1999	GMW-3	0.01300	0.00170	0.03000	0.05300	0.00000	NE of exc.
12/23/1999	GMW-4	0.01000	0.00050	0.02000	0.02400	0.00000	W of exc.
11/06/2009	GMW-7R	0.00000	0.00000	0.00000	0.00000	0.00000	field filtered
10/06/2010	GMW-7R	0.00604	0.00000	0.00000	0.00000	0.00000	field filtered
09/27/2011	GMW-7R	0.00513	0.00000	0.00000	0.00000	0.00000	field filtered
09/26/2012	GMW-7R	0.00575	<0.00050	<0.00500	0.00266	<0.000267	field filtered
12/22/2005	GMW-9R	0.09100	0.00200	0.07000	0.06000	0.00070	
11/13/2006	GMW-9R	0.01000	0.00000	0.01000	0.00000	0.00000	
11/19/2007	GMW-9R	0.05000	0.00200	0.06000	0.04000	0.00000	
12/18/2008	GMW-9R	0.02000	0.00000	0.00000	0.00000	0.00000	
11/06/2009	GMW-9R	0.00000	0.00000	0.00000	0.00000	0.00000	field filtered
10/05/2010	GMW-9R	0.00898	0.00000	0.00000	0.00000	0.00000	field filtered
09/27/2011	GMW-9R	0.02480	0.00000	0.00000	0.00000	0.00000	field filtered
09/26/2012	GMW-9R	0.02520	<0.00050	<0.00500	0.00506	<0.000267	field filtered
Average		0.02875	0.00057	0.02000	0.01313	0.00010	
12/23/1999	GMW-12	0.00500	0.00000	0.00000	0.00200	0.00000	200' S of RW-102
03/29/2002	GMW-13	0.00000	0.00000	0.16000		0.00920	center of metals area
06/27/2002	GMW-13	0.00000	0.00000	0.01000	0.02000	0.10500	
09/26/2002	GMW-13	0.00000	0.00000	0.04000	0.05000	0.01000	
12/11/2002	GMW-13	0.01000	0.00400	0.06000	0.08000	0.01000	
03/26/2003	GMW-13	0.00000	0.00200	0.07000	0.09000	0.01000	
06/12/2003	GMW-13	0.00000	0.00200	0.06000	0.09000	0.00900	
08/29/2003	GMW-13	0.00000	0.00100	0.03000	0.04000	0.00700	
12/02/2003	GMW-13	0.00000	0.00000	0.00000	0.05000	0.02000	
03/24/2004	GMW-13	0.00000	0.00100	0.04000	0.06000	0.04000	
06/25/2004	GMW-13	0.00000	0.00000	0.02000	0.03000	0.03000	
09/27/2004	GMW-13	0.00000	0.00000	0.02000	0.01000	0.03000	
12/14/2004	GMW-13	0.00000	0.00100	0.02000	0.05000	0.04000	
03/18/2005	GMW-13	0.01000	0.00200	0.04000	0.07000	0.03000	
06/20/2005	GMW-13	0.00900	0.00200	0.01000	0.05000	0.39000	
12/22/2005	GMW-13	0.00500	0.00100	0.01000	0.01000	0.00020	
Average		0.00227	0.00000	0.03933	0.05000	0.04936	
03/29/2002	GMW-14	0.00000	0.06000	0.16000	0.09000	0.01970	S edge of metals area
06/27/2002	GMW-14	0.02000	0.00000	0.04000	0.01000	0.00620	
09/26/2002	GMW-14	0.03000	0.00200	0.08000	0.03000	0.03800	
12/11/2002	GMW-14	0.02000	0.00300	0.07000	0.02000	0.02000	
03/26/2003	GMW-14	0.03000	0.00400	0.11000	0.05000	0.03000	
06/12/2003	GMW-14	0.00000	0.00000	0.01000	0.00000	0.01000	
08/29/2003	GMW-14	0.00000	0.00100	0.04000	0.00000	0.00700	
06/25/2004	GMW-14	0.00000	0.00000	0.02000	0.00000	0.00900	
Average		0.01250	0.00200	0.06625	0.02500	0.01749	
11/06/2009	GMW-15	0.00000	0.00000	0.00000	0.00000	0.00000	field filtered
11/06/2009	GMW-15	0.00800	<0.001	<0.01	<0.001	<0.00005	IDNR Split Sample
10/08/2010	GMW-15	0.02120	<0.0005	0.00205	<0.0004	<0.0002	field filtered
09/27/2011	GMW-15	0.01710	<0.0005	<0.0020	<0.0040	<0.0002	field filtered
09/26/2012	GMW-15	0.02460	<0.0005	<0.0050	0.00355	<0.000267	
12/23/1999	MW-1	0.00000	0.00000	0.00000	0.00200	0.00000	W of exc.
12/11/2002	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
03/26/2003	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
06/12/2003	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
08/29/2003	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
12/02/2003	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	

TABLE 2
HEAVY METALS GROUNDWATER DATA FROM VOGEL SITE in mg/l

DATE	WELL #	ARSENIC	CADMIUM	CHROMIUM	LEAD	MERCURY	NOTE
IDNR	MCL	0.01000	0.00500	0.10000	0.01500	0.00200	
03/24/2004	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
06/25/2004	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
09/27/2004	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
12/14/2004	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
03/18/2005	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
06/20/2005	MW-1	0.00000	0.00000	0.00000	0.00000	0.00000	
03/26/2003	TC-6D	0.01000	0.00000	0.00000	0.00000	0.00000	Near RW 104
06/12/2003	TC-6D	0.00000	0.00000	0.02000	0.00000	0.00000	in deep aquifer
08/29/2003	TC-6D	0.00000	0.00000	0.01000	0.00000	0.00000	
12/02/2003	TC-6D	0.02000	0.00000	0.00000	0.00000	0.00000	
03/24/2004	TC-6D	0.00000	0.00000	0.03000	0.00000	0.00000	
06/25/2004	TC-6D	0.00000	0.00000	0.04000	0.00000	0.00000	
09/27/2004	TC-6D	0.01000	0.00000	0.05000	0.00000	0.00000	
12/14/2004	TC-6D	0.00000	0.00000	0.03000	0.00000	0.00000	
03/18/2005	TC-6D	0.00000	0.00000	0.01000	0.00000	0.00000	
06/20/2005	TC-6D	0.01700	0.00000	0.01000	0.00000	0.00000	
12/22/2005	TC-6D	0.01500	0.00000	0.00000	0.00000	0.00000	
11/13/2006	TC-6D	0.02000	0.00000	0.00000	0.00000	0.00000	
11/19/2007	TC-6D	0.02000	0.00000	0.00000	0.00000	0.00000	
12/18/2008	TC-6D	0.02000	0.00000	0.00000	0.00000	0.00000	
11/06/2009	TC-6D	0.00000	0.00000	0.00000	0.00000	0.00000	field filtered
10/05/2010	TC-6D	0.01880	0.00000	0.00000	0.00000	0.00000	field filtered
09/27/2011	TC-6D	0.01400	0.00000	0.00000	0.00000	0.00000	field filtered
09/26/2012	TC-6D	0.01710	<0.00050	<0.00500	<0.00050	<0.000267	field filtered
Average		0.00969	0.00000	0.01176	0.00000	0.00000	

*IDNR geoprobe 6/29/2000 soil boring in metals placement area.

Bold numbers = exceeds MCL limits

MCL = Maximum Contaminant Level for a protected groundwater source; NPG = Non-protected Groundwater

TABLE 3

MNA analytical results for 6/26/09

Well	BTEX mg/l	pH	Redox EV	DO mg/l	Nitrate mg/l	Sulfate mg/l	Fe (II) mg/l	Methane ug/l
Wells within the plume								
GMW-7R	9,034	7.30	-192	1.06	0.0	47	2.23	82
GMW-9R	22,686	7.14	-167	1.31	0.0	14	3.17	146
GMW-13	93,786	7.03	-83	1.09	0.0	0.0	3.14	347
GMW-21	6,563	7.12	-200	1.81	0.0	56	3.10	<26
GMW-25	161	6.78	83.7	10.98	0.9	+700	0.08	<26
Sentinel Well (farthest downgradient well)								
GMW-30	31	6.92	138	9.13	1.9	27	1.64	<26
No detectable Hydrocarbons (up gradient and side gradient wells)								
MW-1	ND	7.19	-49.5	7.50	0.0	+700	0.0	<26
MW-5	ND	7.05	-12.7	7.75	0.4	43	0.03	<26

ND = non-detected; na = not analyzed

MNA analytical results for 9/17/09

Well	BTEX mg/l	pH	Redox EV	DO mg/l	Nitrate mg/l	Sulfate mg/l	Fe (II) mg/l	Methane ug/l
Wells within the plume								
GMW-7R	12,455	7.07	-178	1.01	2.1	57	1.44	na
GMW-9R	59,966	7.01	-152	1.11	1.4	28	3.08	na
GMW-13	117,528	6.91	-98.5	0.81	5.6	0.0	+3.0	na
GMW-21	11,788	6.99	-186.5	1.33	11.7	61	+3.0	na
GMW-25	367	6.72	62.9	8.74	14.6	49	2.4	na
Sentinel Well (farthest downgradient well)								
GMW-30	42	6.57	95.2	9.07	0.0	23	0.23	na
No detectable Hydrocarbons (up gradient and side gradient wells)								
MW-1	ND	7.02	-45.8	10.1	1.1	+700	0.0	na
MW-5	ND	6.97	-27.1	9.13	0.8	49	0.0	na

MNA analytical results for 11/06/09

Well	BTEX mg/l	pH	Redox EV	DO mg/l	Nitrate mg/l	Sulfate mg/l	Fe (II) mg/l	Methane ug/l
Wells within the plume								
GMW-7R	15,759	6.84	-164.5	1.84	1.2	64	0.64	na
GMW-9R	59,810	6.81	-136.9	1.15	0.0	35	+3.0	na
GMW-13	140,730	6.79	-114.0	1.04	4.4	0.0	+3.0	na
GMW-21	13,334	6.87	-173.0	1.92	10.3	+70	+3.0	na
GMW-25	106	6.66	42.0	9.00	15.5	36	+3.0	na
Sentinel Well (farthest downgradient well)								
GMW-30	ND	6.25	52.3	8.40	0.0	15	0.52	na
No detectable Hydrocarbons (up gradient and side gradient wells)								
MW-1	ND	6.85	-42.0	8.76	1.9	+700	0.06	na
MW-5	ND	6.89	-27.0	8.80	0.5	35	0.0	na

ND = non-detected; na = not analyzed

TABLE 3**MNA analytical results for 5/10/10**

Well	BTEX mg/l	pH	Redox EV	DO mg/l	Nitrate mg/l	Sulfate mg/l	Fe (II) mg/l	Methane ug/l
Wells within the plume								
GMW-7R	6,960	7.64	2.20	1.58	<1.0	94	2.12	na
GMW-9R	55,020	7.42	-11.1	1.89	<1.0	9	9.15	na
GMW-13	140,230	7.30	7.48	1.72	0.3	0.0	8.40	na
GMW-21	2,283	7.66	8.1	1.75	<1.0	+700	0.98	na
GMW-25	552	8.05	30.5	9.05	<1.0	68	1.02	na
Sentinel Well (farthest downgradient well)								
GMW-30	ND	7.78	35.7	3.13	3.6	53	0.17	na
No detectable Hydrocarbons (up gradient and side gradient wells)								
MW-1	ND	7.62	22.2	6.0	0.3	350	0.26	na
MW-5	ND	7.74	22.4	7.07	0.9	112	0.17	na

MNA analytical results for 6/24/10

Well	BTEX mg/l	pH	Redox EV	DO mg/l	Nitrate mg/l	Sulfate mg/l	Fe (II) mg/l	Methane ug/l
Wells within the plume								
GMW-7R	6,960	6.73	80.3	1.78	1.6	29	0.26	na
GMW-9R	55,020	7.07	45.0	1.93	4.7	40	3.11	na
GMW-13	140,230	6.82	63.7	2.25	3.0	7	7.38	na
GMW-21	2,283	7.14	69.3	4.9	4.9	+700	2.12	na
GMW-25	552	7.19	83	8.58	4.0	+700	0.97	na
Sentinel Well (farthest downgradient well)								
GMW-30	ND	7.16	101.8	7.77	4.8	157	0.00	na
No detectable Hydrocarbons (up gradient and side gradient wells)								
MW-1	ND	6.3	74.9	8.8	5.2	706	0.07	na
MW-5	ND	7.02	98.9	9.82	2.0	71	0.00	na

MNA analytical results for 10/20/10

Well	BTEX mg/l	pH	Redox EV	DO mg/l	Nitrate mg/l	Sulfate mg/l	Fe (II) mg/l	Methane ug/l
Wells within the plume								
GMW-7R	11,350	8.0	-26.9	2.10	0.80	24	0.44	na
GMW-9R	44,250	7.40	-19.8	1.94	0.0	32	6.24	na
GMW-13	145,300	7.30	-18.1	1.58	3.2	0.0	6.25	na
GMW-21	2,878	7.0	26.4	2.12	2.9	670	0.37	na
GMW-25	291	6.9	29.5	7.52	0.0	440	0.37	na
Sentinel Well (farthest downgradient well)								
GMW-30	ND	7.3	27.3	9.1	0.0	35	0.28	na
No detectable Hydrocarbons (up gradient and side gradient wells)								
MW-1	ND	7.5	0.60	4.81	2.3	730	0.0	na
MW-5	ND	7.3	8.2	7.39	1.1	51	0.06	na

ND = non-detected; na = not analyzed

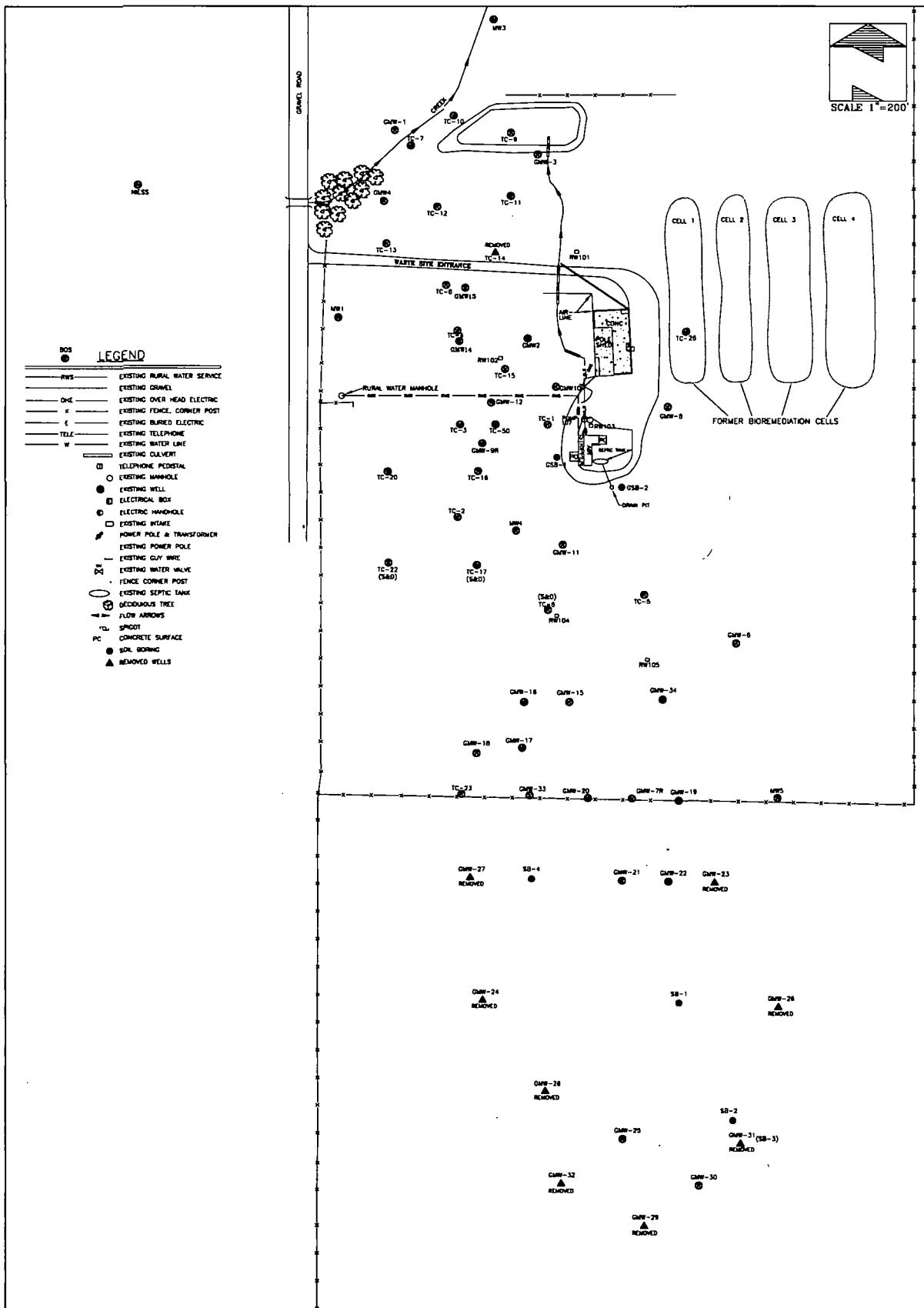


FIGURE 1
SITE MAP
VOGEL PAINT WASTE SITE
MAURICE, IOWA

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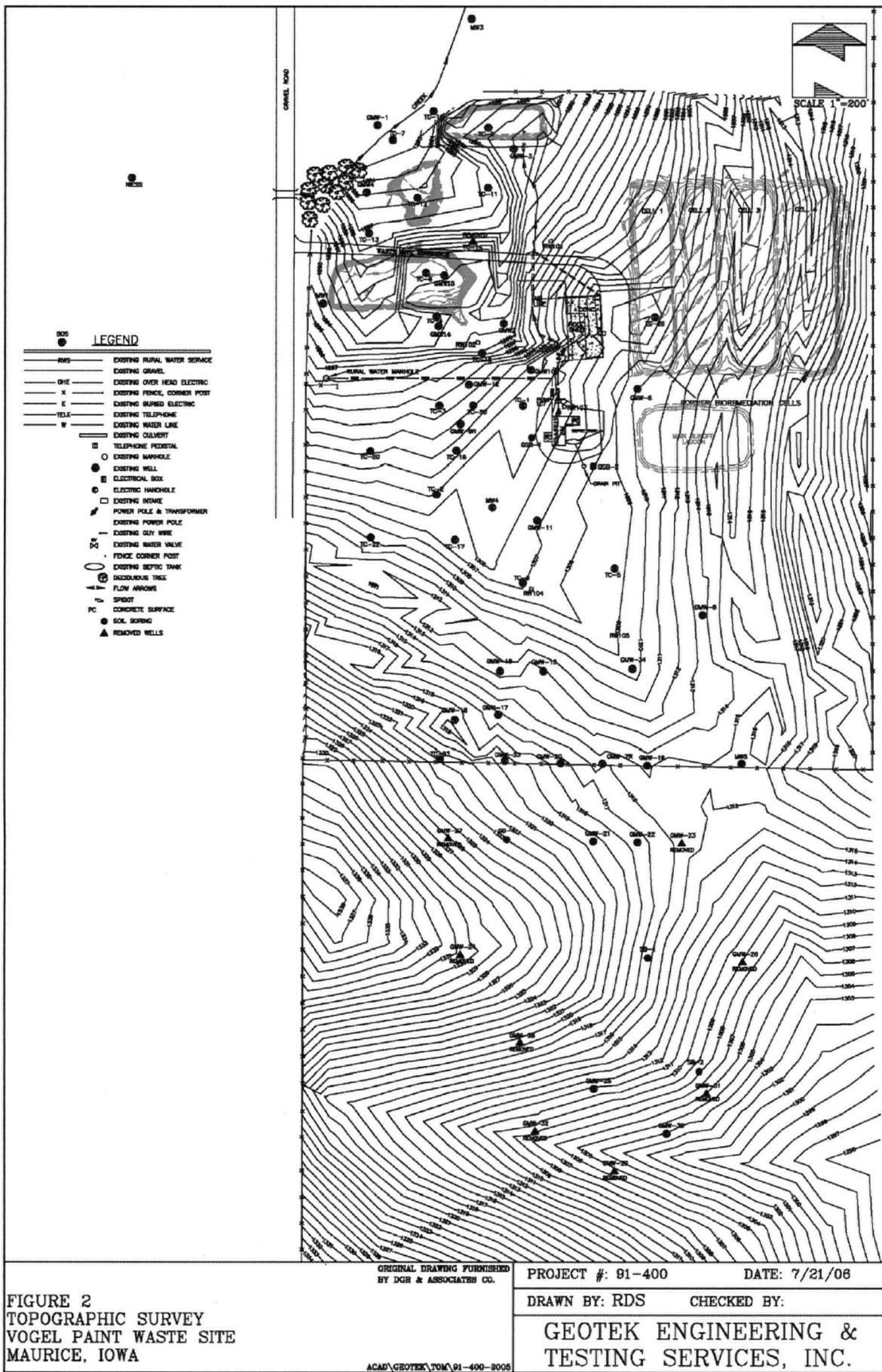


FIGURE 2
TOPOGRAPHIC SURVEY
VOGEL PAINT WASTE SITE
MAURICE, IOWA

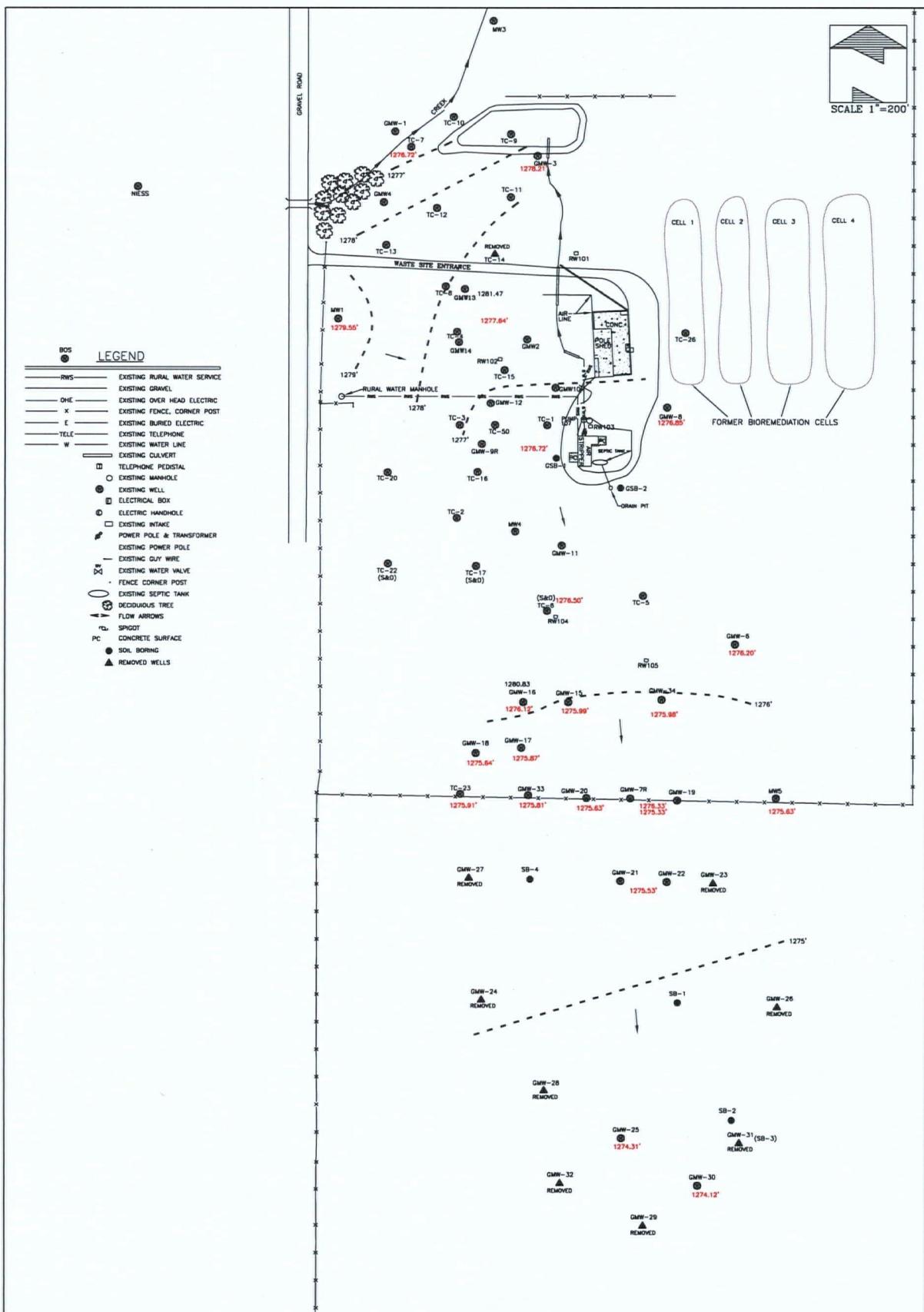
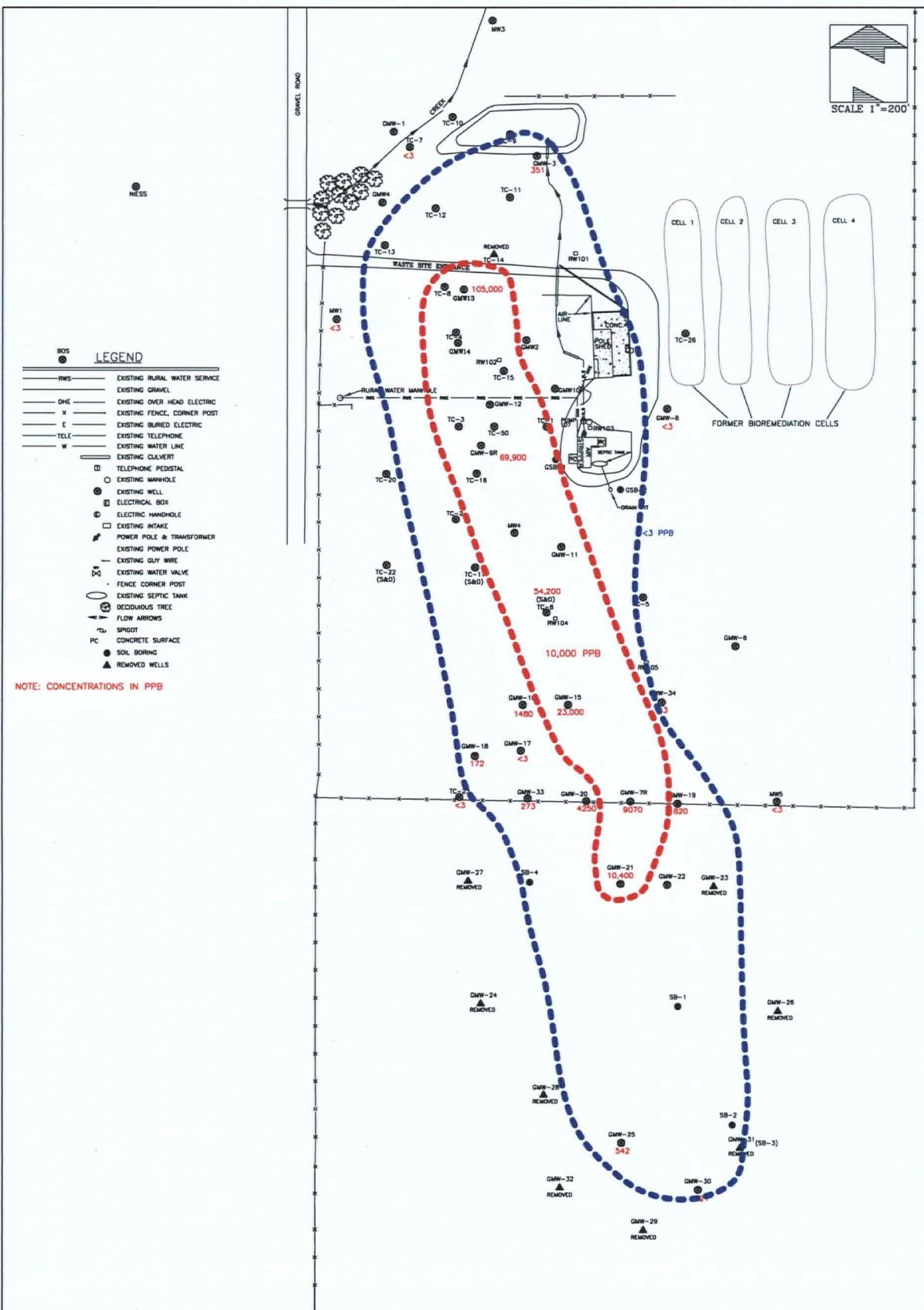


FIGURE 3
GROUNDWATER COUNTOUR MAP
BASED ON 9-26-12 WATER LEVELS
VOGEL PAINT WASTE SITE
MAURICE, IOWA

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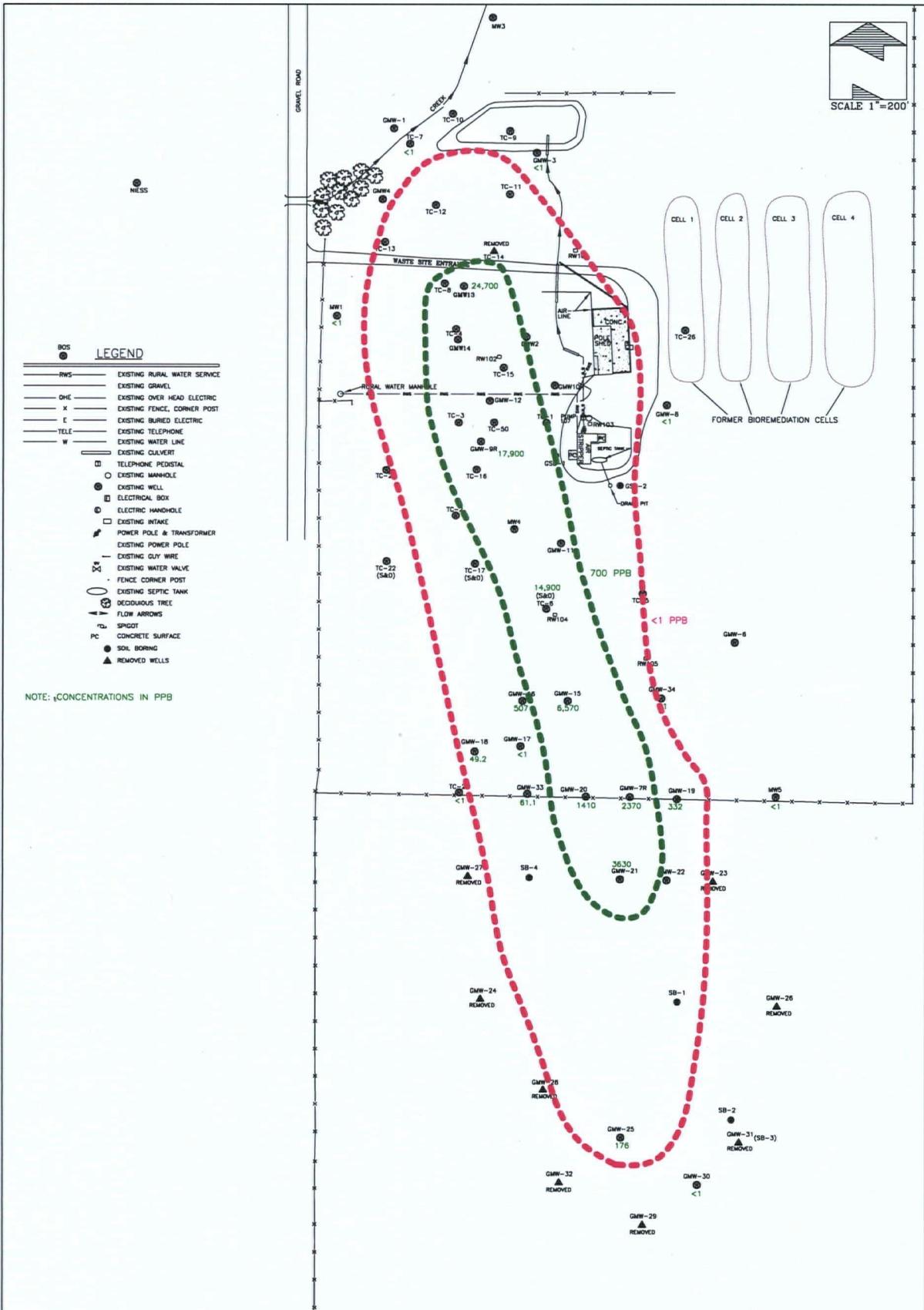


FIGURE 5
ETHYLBENZENE PLUME MAP
9-26-12 DATA
VOGEL PAINT WASTE SITE
MAURICE, IOWA

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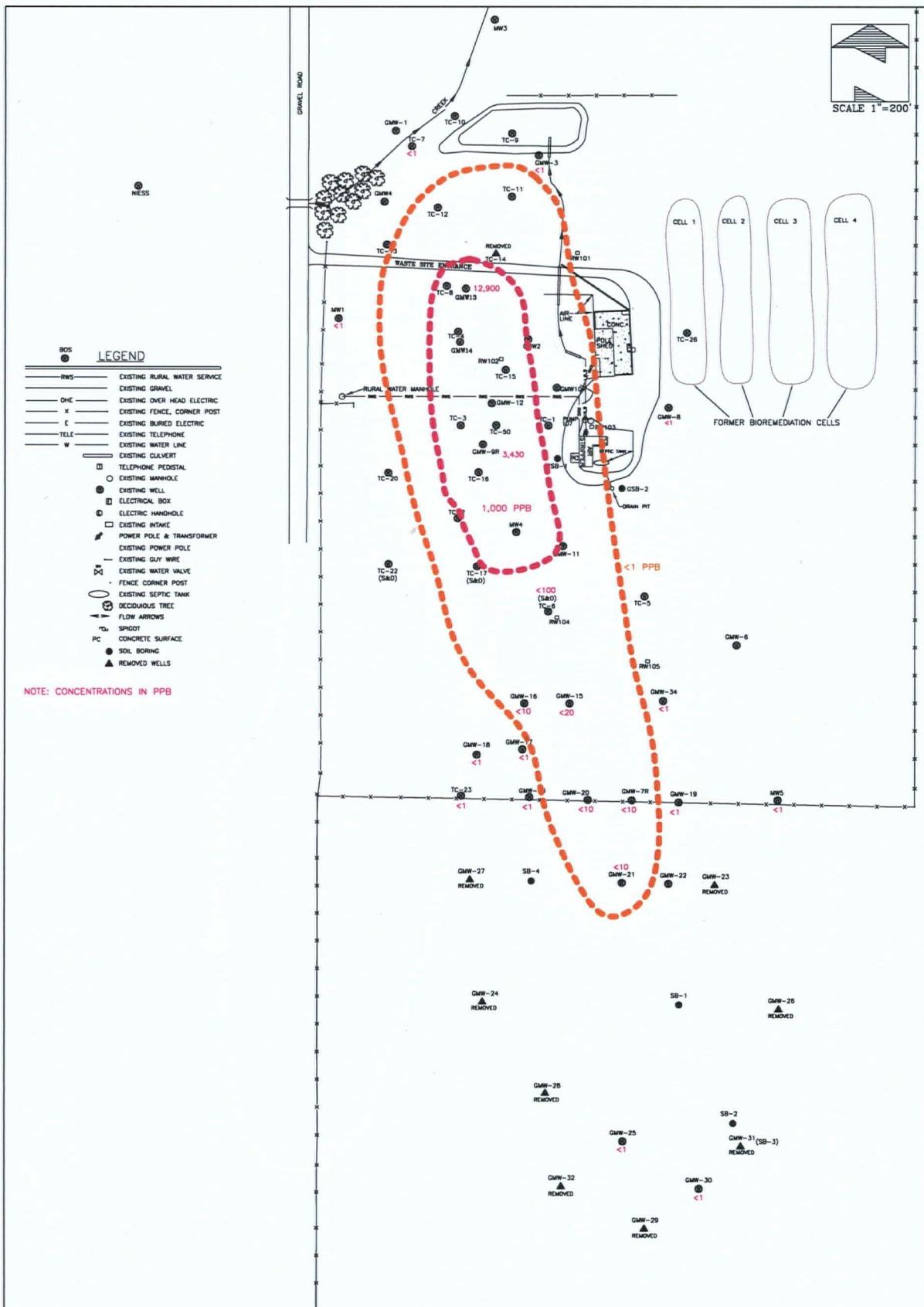


FIGURE 6
TOLUENE PLUME MAP
9-26-12 DATA
VOGEL PAINT WASTE SITE
MAURICE, IOWA

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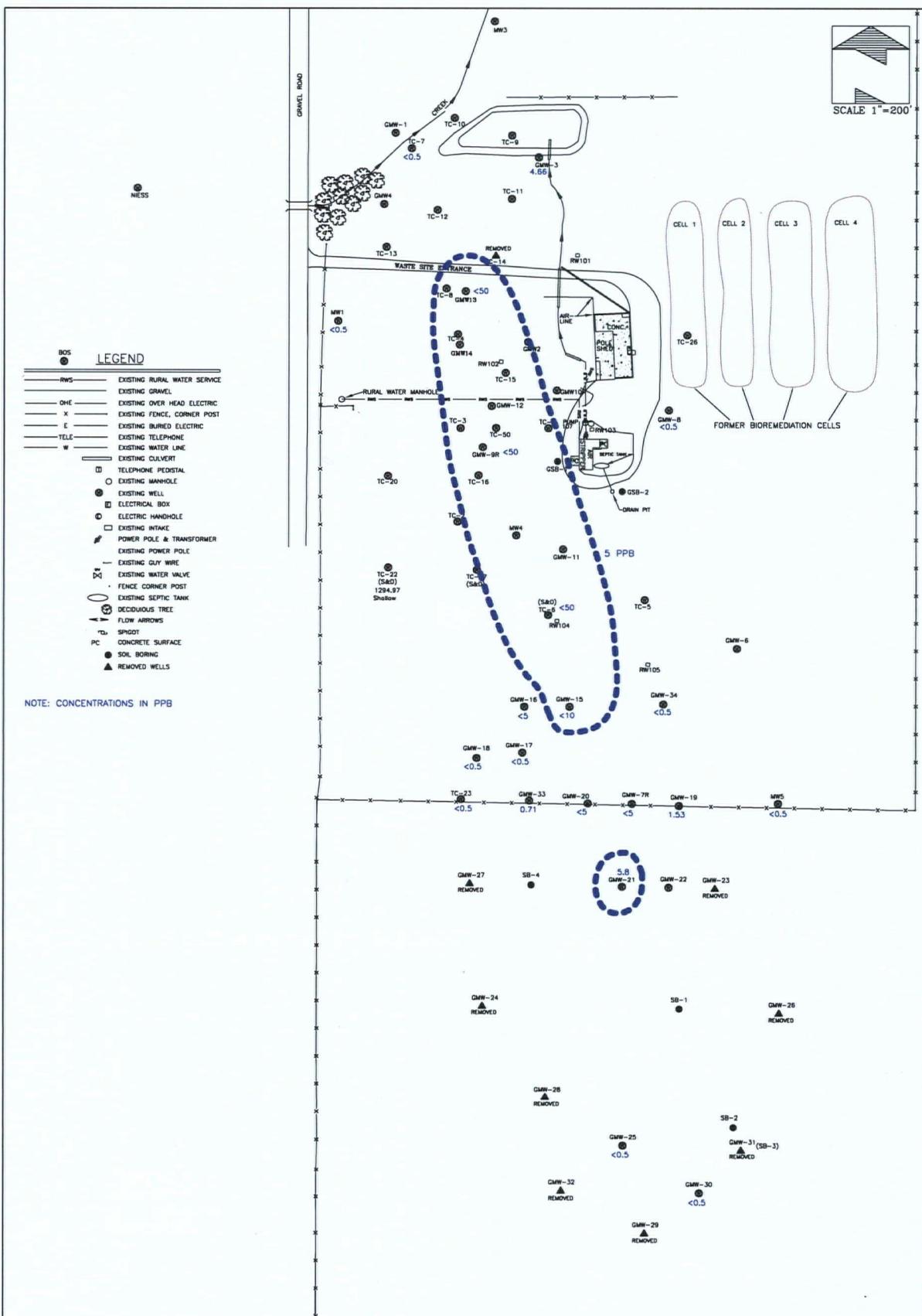
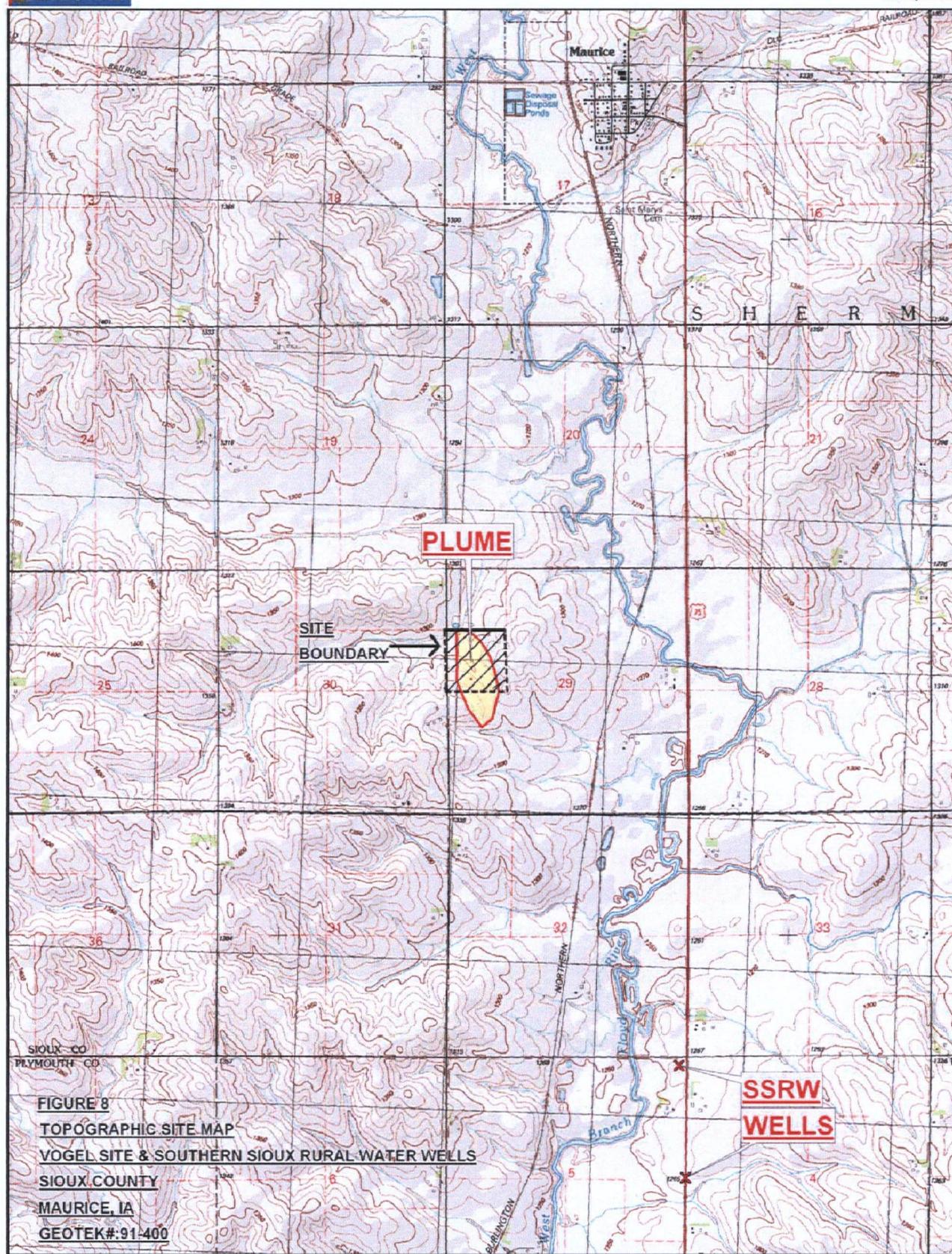


FIGURE 7
BENZENE PLUME MAP
9-26-12 DATA
VOGEL PAINT WASTE SITE
MAURICE, IOWA

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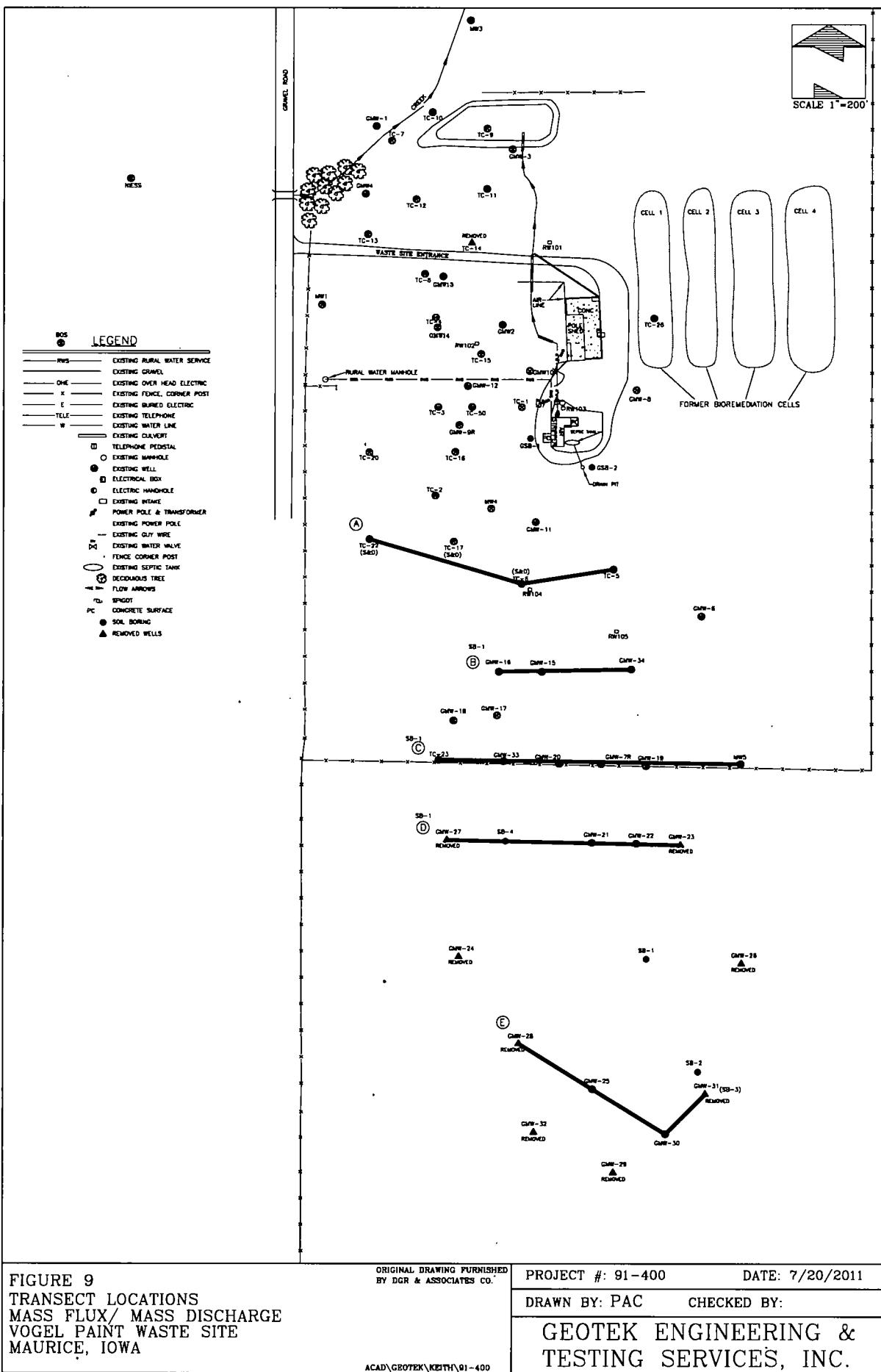


FIGURE 9
TRANSECT LOCATIONS
MASS FLUX/ MASS DISCHARGE
VOGEL PAINT WASTE SITE
MAURICE, IOWA

APPENDIX A

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Cedar Falls

704 Enterprise Drive

Cedar Falls, IA 50613

Tel: 800-750-2401

TestAmerica Job ID: CVI1753

Client Project/Site: 91-400

Client Project Description: Vogel's

For:

GEOTEK ENGINEERING & TESTING SERVICES

909 E. 50th Street

Sioux Falls, SD 57104

Attn: Keith Delange

Angela Muehling

Authorized for release by:

10/3/2012 5:17:56 PM

Angela Muehling

Project Coordinator

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Designee for

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Organics Manager

derrick.klinkenberg@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
CVI1753-01	MW-1	Ground Water	09/26/12 11:38	09/27/12 09:07
CVI1753-02	MW-5	Ground Water	09/26/12 09:49	09/27/12 09:07
CVI1753-03	GMW-3	Ground Water	09/26/12 11:24	09/27/12 09:07
CVI1753-04	GMW-7R	Ground Water	09/26/12 09:46	09/27/12 09:07
CVI1753-05	GMW-8	Ground Water	09/26/12 11:17	09/27/12 09:07
CVI1753-06	GMW-9R	Ground Water	09/26/12 11:57	09/27/12 09:07
CVI1753-07	GMW-13	Ground Water	09/26/12 11:47	09/27/12 09:07
CVI1753-08	GMW-15	Ground Water	09/26/12 10:00	09/27/12 09:07
CVI1753-09	GMW-16	Ground Water	09/26/12 10:30	09/27/12 09:07
CVI1753-10	GMW-17	Ground Water	09/26/12 10:05	09/27/12 09:07
CVI1753-11	GMW-18	Ground Water	09/26/12 10:02	09/27/12 09:07
CVI1753-12	GMW-19	Ground Water	09/26/12 09:38	09/27/12 09:07
CVI1753-13	GMW-20	Ground Water	09/26/12 09:27	09/27/12 09:07
CVI1753-14	GMW-21	Ground Water	09/26/12 09:36	09/27/12 09:07
CVI1753-15	GMW-25	Ground Water	09/26/12 09:50	09/27/12 09:07
CVI1753-16	GMW-30	Ground Water	09/26/12 09:25	09/27/12 09:07
CVI1753-17	GMW-33	Ground Water	09/26/12 09:17	09/27/12 09:07
CVI1753-18	GMW-34	Ground Water	09/26/12 09:57	09/27/12 09:07
CVI1753-19	TC-6D	Ground Water	09/26/12 11:00	09/27/12 09:07
CVI1753-20	TC-7	Ground Water	09/26/12 11:35	09/27/12 09:07
CVI1753-21	TC-23	Ground Water	09/26/12 09:52	09/27/12 09:07
CVI1753-22	BUS	Ground Water	09/26/12 09:00	09/27/12 09:07
CVI1753-23	Neiss	Ground Water	09/26/12 09:05	09/27/12 09:07
CVI1753-24	Dup	Ground Water	09/26/12 00:00	09/27/12 09:07

Detection Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: MW-1

Lab Sample ID: CVI1753-01

No Detections

Client Sample ID: MW-5

Lab Sample ID: CVI1753-02

No Detections

Client Sample ID: GMW-3

Lab Sample ID: CVI1753-03

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4.66		0.500		ug/L	1.00		SW 8260B	Total
Xylenes, total	351		3.00		ug/L	1.00		SVV 8260B	Total

Client Sample ID: GMW-7R

Lab Sample ID: CVI1753-04

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	2370		10.0		ug/L	10.0		SW 8260B	Total
Xylenes, total	9070		30.0		ug/L	10.0		SW 8260B	Total
Arsenic	0.00575		0.00100		mg/L	1.00		SW 6020A	Total
Lead	0.00266		0.000500		mg/L	1.00		SW 6020A	Total

Client Sample ID: GMW-8

Lab Sample ID: CVI1753-05

No Detections

Client Sample ID: GMW-9R

Lab Sample ID: CVI1753-06

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	17900		100		ug/L	100		SW 8260B	Total
Toluene	3430		100		ug/L	100		SW 8260B	Total
Xylenes, total	69900		300		ug/L	100		SW 8260B	Total
Arsenic	0.0252		0.00100		mg/L	1.00		SW 6020A	Total
Lead	0.00506		0.000500		mg/L	1.00		SW 6020A	Total

Client Sample ID: GMW-13

Lab Sample ID: CVI1753-07

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	24700		100		ug/L	100		SW 8260B	Total
Toluene	12900		100		ug/L	100		SW 8260B	Total
Xylenes, total	105000		300		ug/L	100		SW 8260B	Total

Client Sample ID: GMW-15

Lab Sample ID: CVI1753-08

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	6570		20.0		ug/L	20.0		SW 8260B	Total
Xylenes, total - RE1	23000		300		ug/L	100		SW 8260B	Total
Arsenic	0.0246		0.00100		mg/L	1.00		SW 6020A	Total
Lead	0.00355		0.000500		mg/L	1.00		SW 6020A	Total

Client Sample ID: GMW-16

Lab Sample ID: CVI1753-09

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	507		10.0		ug/L	10.0		SW 8260B	Total
Xylenes, total	1480		30.0		ug/L	10.0		SW 8260B	Total

Detection Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-17

Lab Sample ID: CVI1753-10

No Detections

Client Sample ID: GMW-18

Lab Sample ID: CVI1753-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	49.2		1.00		ug/L	1.00		SW 8260B	Total
Xylenes, total	172		3.00		ug/L	1.00		SW 8260B	Total
pH	>2		2.00		units	1.00		SW 9041A	Total

Client Sample ID: GMW-19

Lab Sample ID: CVI1753-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.53		0.500		ug/L	1.00		SW 8260B	Total
Ethylbenzene	332		1.00		ug/L	1.00		SW 8260B	Total
Xylenes, total - RE1	1820		60.0		ug/L	20.0		SW 8260B	Total

Client Sample ID: GMW-20

Lab Sample ID: CVI1753-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	1410		10.0		ug/L	10.0		SW 8260B	Total
Xylenes, total	4250		30.0		ug/L	10.0		SW 8260B	Total

Client Sample ID: GMW-21

Lab Sample ID: CVI1753-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	5.80		5.00		ug/L	10.0		SW 8260B	Total
Ethylbenzene	3630		10.0		ug/L	10.0		SW 8260B	Total
Xylenes, total - RE1	10400		300		ug/L	100		SW 8260B	Total

Client Sample ID: GMW-25

Lab Sample ID: CVI1753-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	176		1.00		ug/L	1.00		SW 8260B	Total
Xylenes, total	542		3.00		ug/L	1.00		SW 8260B	Total

Client Sample ID: GMW-30

Lab Sample ID: CVI1753-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, total	3.21		3.00		ug/L	1.00		SW 8260B	Total

Client Sample ID: GMW-33

Lab Sample ID: CVI1753-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.710		0.500		ug/L	1.00		SW 8260B	Total
Ethylbenzene	61.1		1.00		ug/L	1.00		SW 8260B	Total
Xylenes, total	273		3.00		ug/L	1.00		SW 8260B	Total

Client Sample ID: GMW-34

Lab Sample ID: CVI1753-18

No Detections

Client Sample ID: TC-6D

Lab Sample ID: CVI1753-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	14900		100		ug/L	100		SW 8260B	Total



Detection Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: TC-6D (Continued)

Lab Sample ID: CVI1753-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, total	54200		300		ug/L	100		SW 8260B	Total
Arsenic	0.0171		0.00100		mg/L	1.00		SW 6020A	Total

Client Sample ID: TC-7

Lab Sample ID: CVI1753-20

No Detections

Client Sample ID: TC-23

Lab Sample ID: CVI1753-21

No Detections

Client Sample ID: BUS

Lab Sample ID: CVI1753-22

No Detections

Client Sample ID: Neiss

Lab Sample ID: CVI1753-23

No Detections

Client Sample ID: Dup

Lab Sample ID: CVI1753-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	2440		10.0		ug/L	10.0		SW 8260B	Total
Xylenes, total	9290		30.0		ug/L	10.0		SW 8260B	Total

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: MW-1

Date Collected: 09/26/12 11:38

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-01

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/29/12 00:00	09/29/12 02:31	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/29/12 00:00	09/29/12 02:31	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/29/12 00:00	09/29/12 02:31	1.00
Toluene	<1.00		1.00		ug/L		09/29/12 00:00	09/29/12 02:31	1.00
Xylenes, total	<3.00		3.00		ug/L		09/29/12 00:00	09/29/12 02:31	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	99		75 - 120				09/29/12 00:00	09/29/12 02:31	1.00
Toluene-d8	100		80 - 120				09/29/12 00:00	09/29/12 02:31	1.00
4-Bromofluorobenzene	102		75 - 110				09/29/12 00:00	09/29/12 02:31	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: MW-5

Date Collected: 09/26/12 09:49

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-02

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 08:08	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 08:08	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 08:08	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 08:08	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 08:08	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	105		75 - 120				09/28/12 00:00	09/28/12 08:08	1.00
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 08:08	1.00
4-Bromofluorobenzene	102		75 - 110				09/28/12 00:00	09/28/12 08:08	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-3

Date Collected: 09/26/12 11:24

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-03

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.66		0.500		ug/L		09/28/12 00:00	09/28/12 08:32	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 08:32	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 08:32	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 08:32	1.00
Xylenes, total	351		3.00		ug/L		09/28/12 00:00	09/28/12 08:32	1.00
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Dibromofluoromethane		105		75 - 120			09/28/12 00:00	09/28/12 08:32	1.00
Toluene-d8		90		80 - 120			09/28/12 00:00	09/28/12 08:32	1.00
4-Bromofluorobenzene		101		75 - 110			09/28/12 00:00	09/28/12 08:32	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-7R
Date Collected: 09/26/12 09:46
Date Received: 09/27/12 09:07
Sampler Name: Jeff Thorshiem

Lab Sample ID: CVI1753-04
Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.00		5.00		ug/L		09/28/12 00:00	09/28/12 12:29	10.0
2-Butanone (MEK)	<100		100		ug/L		09/28/12 00:00	09/28/12 12:29	10.0
Ethylbenzene	2370		10.0		ug/L		09/28/12 00:00	09/28/12 12:29	10.0
Toluene	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 12:29	10.0
Xylenes, total	9070		30.0		ug/L		09/28/12 00:00	09/28/12 12:29	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	113		75 - 120				09/28/12 00:00	09/28/12 12:29	10.0
Toluene-d8	87		80 - 120				09/28/12 00:00	09/28/12 12:29	10.0
4-Bromofluorobenzene	107		75 - 110				09/28/12 00:00	09/28/12 12:29	10.0

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00

Method: SW 7470A - Total Metals by SW 846 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000267		0.000267		mg/L		10/01/12 15:00	10/02/12 16:28	1.00

Method: SW 6020A - Total Metals by SW 846 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00575		0.00100		mg/L		09/28/12 11:50	10/03/12 01:37	1.00
Cadmium	<0.000500		0.000500		mg/L		09/28/12 11:50	10/03/12 01:37	1.00
Chromium	<0.00500		0.00500		mg/L		09/28/12 11:50	10/03/12 01:37	1.00
Lead	0.00266		0.000500		mg/L		09/28/12 11:50	10/03/12 01:37	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-8

Date Collected: 09/26/12 11:17

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-05

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 08:55	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 08:55	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 08:55	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 08:55	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 08:55	1.00
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Dibromofluoromethane		108		75 - 120			09/28/12 00:00	09/28/12 08:55	1.00
Toluene-d8		88		80 - 120			09/28/12 00:00	09/28/12 08:55	1.00
4-Bromofluorobenzene		101		75 - 110			09/28/12 00:00	09/28/12 08:55	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-9R

Date Collected: 09/26/12 11:57

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thorshiem

Lab Sample ID: CVI1753-06

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<50.0		50.0		ug/L		09/28/12 00:00	09/28/12 14:28	100
2-Butanone (MEK)	<1000		1000		ug/L		09/28/12 00:00	09/28/12 14:28	100
Ethylbenzene	17900		100		ug/L		09/28/12 00:00	09/28/12 14:28	100
Toluene	3430		100		ug/L		09/28/12 00:00	09/28/12 14:28	100
Xylenes, total	69900		300		ug/L		09/28/12 00:00	09/28/12 14:28	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	104		75 - 120				09/28/12 00:00	09/28/12 14:28	100
Toluene-d8	87		80 - 120				09/28/12 00:00	09/28/12 14:28	100
4-Bromofluorobenzene	104		75 - 110				09/28/12 00:00	09/28/12 14:28	100

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00

Method: SW 7470A - Total Metals by SW 846 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000267		0.000267		mg/L		10/01/12 15:00	10/02/12 16:33	1.00

Method: SW 6020A - Total Metals by SW 846 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0252		0.00100		mg/L		09/28/12 11:50	10/03/12 01:43	1.00
Cadmium	<0.000500		0.000500		mg/L		09/28/12 11:50	10/03/12 01:43	1.00
Chromium	<0.00500		0.00500		mg/L		09/28/12 11:50	10/03/12 01:43	1.00
Lead	0.00506		0.000500		mg/L		09/28/12 11:50	10/03/12 01:43	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-13

Date Collected: 09/26/12 11:47

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-07

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<50.0		50.0		ug/L		09/28/12 00:00	09/28/12 14:52	100
2-Butanone (MEK)	<1000		1000		ug/L		09/28/12 00:00	09/28/12 14:52	100
Ethylbenzene	24700		100		ug/L		09/28/12 00:00	09/28/12 14:52	100
Toluene	12900		100		ug/L		09/28/12 00:00	09/28/12 14:52	100
Xylenes, total	105000		300		ug/L		09/28/12 00:00	09/28/12 14:52	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	105		75 - 120				09/28/12 00:00	09/28/12 14:52	100
Toluene-d8	86		80 - 120				09/28/12 00:00	09/28/12 14:52	100
4-Bromofluorobenzene	103		75 - 110				09/28/12 00:00	09/28/12 14:52	100

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-15

Date Collected: 09/26/12 10:00

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thorshiem

Lab Sample ID: CVI1753-08

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 14:05	20.0
2-Butanone (MEK)	<200		200		ug/L		09/28/12 00:00	09/28/12 14:05	20.0
Ethylbenzene	6570		20.0		ug/L		09/28/12 00:00	09/28/12 14:05	20.0
Toluene	<20.0		20.0		ug/L		09/28/12 00:00	09/28/12 14:05	20.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	101		75 - 120				09/28/12 00:00	09/28/12 14:05	20.0
Toluene-d8	86		80 - 120				09/28/12 00:00	09/28/12 14:05	20.0
4-Bromofluorobenzene	104		75 - 110				09/28/12 00:00	09/28/12 14:05	20.0

Method: SW 8260B - Volatile Organic Compounds - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, total	23000		300		ug/L		09/29/12 00:00	09/29/12 07:07	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	113		75 - 120				09/29/12 00:00	09/29/12 07:07	100
Toluene-d8	89		80 - 120				09/29/12 00:00	09/29/12 07:07	100
4-Bromofluorobenzene	103		75 - 110				09/29/12 00:00	09/29/12 07:07	100

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00

Method: SW 7470A - Total Metals by SW 846 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000267		0.000267		mg/L		10/01/12 15:00	10/02/12 16:35	1.00

Method: SW 6020A - Total Metals by SW 846 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0246		0.00100		mg/L		09/28/12 11:50	10/03/12 01:50	1.00
Cadmium	<0.000500		0.000500		mg/L		09/28/12 11:50	10/03/12 01:50	1.00
Chromium	<0.00500		0.00500		mg/L		09/28/12 11:50	10/03/12 01:50	1.00
Lead	0.00355		0.000500		mg/L		09/28/12 11:50	10/03/12 01:50	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-16

Date Collected: 09/26/12 10:30

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-09

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.00		5.00		ug/L		09/28/12 00:00	09/28/12 12:53	10.0
2-Butanone (MEK)	<100		100		ug/L		09/28/12 00:00	09/28/12 12:53	10.0
Ethylbenzene	507		10.0		ug/L		09/28/12 00:00	09/28/12 12:53	10.0
Toluene	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 12:53	10.0
Xylenes, total	1480		30.0		ug/L		09/28/12 00:00	09/28/12 12:53	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	105		75 - 120				09/28/12 00:00	09/28/12 12:53	10.0
Toluene-d8	86		80 - 120				09/28/12 00:00	09/28/12 12:53	10.0
4-Bromofluorobenzene	103		75 - 110				09/28/12 00:00	09/28/12 12:53	10.0

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-17

Date Collected: 09/26/12 10:05

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-10

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 09:19	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 09:19	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 09:19	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 09:19	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 09:19	1.00
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Dibromofluoromethane		104		75 - 120			09/28/12 00:00	09/28/12 09:19	1.00
Toluene-d8		88		80 - 120			09/28/12 00:00	09/28/12 09:19	1.00
4-Bromofluorobenzene		102		75 - 110			09/28/12 00:00	09/28/12 09:19	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-18
Date Collected: 09/26/12 10:02
Date Received: 09/27/12 09:07
Sampler Name: Jeff Thrusheim

Lab Sample ID: CVI1753-11
Matrix: Ground Water
Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 09:43	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 09:43	1.00
Ethylbenzene	49.2		1.00		ug/L		09/28/12 00:00	09/28/12 09:43	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 09:43	1.00
Xylenes, total	172		3.00		ug/L		09/28/12 00:00	09/28/12 09:43	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		75 - 120				09/28/12 00:00	09/28/12 09:43	1.00
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 09:43	1.00
4-Bromofluorobenzene	106		75 - 110				09/28/12 00:00	09/28/12 09:43	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	>2		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-19

Date Collected: 09/26/12 09:38

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-12

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.53		0.500		ug/L		09/28/12 00:00	09/28/12 10:07	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 10:07	1.00
Ethylbenzene	332		1.00		ug/L		09/28/12 00:00	09/28/12 10:07	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 10:07	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	108		75 - 120				09/28/12 00:00	09/28/12 10:07	1.00
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 10:07	1.00
4-Bromofluorobenzene	106		75 - 110				09/28/12 00:00	09/28/12 10:07	1.00

Method: SW 8260B - Volatile Organic Compounds - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, total	1820		60.0		ug/L		09/29/12 00:00	09/29/12 00:46	20.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	111		75 - 120				09/29/12 00:00	09/29/12 00:46	20.0
Toluene-d8	86		80 - 120				09/29/12 00:00	09/29/12 00:46	20.0
4-Bromofluorobenzene	102		75 - 110				09/29/12 00:00	09/29/12 00:46	20.0

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

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Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-20

Date Collected: 09/26/12 09:27

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thrusheim

Lab Sample ID: CVI1753-13

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.00		5.00		ug/L		09/28/12 00:00	09/28/12 13:17	10.0
2-Butanone (MEK)	<100		100		ug/L		09/28/12 00:00	09/28/12 13:17	10.0
Ethylbenzene	1410		10.0		ug/L		09/28/12 00:00	09/28/12 13:17	10.0
Toluene	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 13:17	10.0
Xylenes, total	4250		30.0		ug/L		09/28/12 00:00	09/28/12 13:17	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	106		75 - 120				09/28/12 00:00	09/28/12 13:17	10.0
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 13:17	10.0
4-Bromofluorobenzene	106		75 - 110				09/28/12 00:00	09/28/12 13:17	10.0

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-21

Date Collected: 09/26/12 09:36

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-14

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.80		5.00		ug/L		09/28/12 00:00	09/28/12 13:41	10.0
2-Butanone (MEK)	<100		100		ug/L		09/28/12 00:00	09/28/12 13:41	10.0
Ethylbenzene	3630		10.0		ug/L		09/28/12 00:00	09/28/12 13:41	10.0
Toluene	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 13:41	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	104		75 - 120				09/28/12 00:00	09/28/12 13:41	10.0
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 13:41	10.0
4-Bromofluorobenzene	105		75 - 110				09/28/12 00:00	09/28/12 13:41	10.0

Method: SW 8260B - Volatile Organic Compounds - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, total	10400		300		ug/L		09/29/12 00:00	09/29/12 06:43	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	108		75 - 120				09/29/12 00:00	09/29/12 06:43	100
Toluene-d8	86		80 - 120				09/29/12 00:00	09/29/12 06:43	100
4-Bromofluorobenzene	100		75 - 110				09/29/12 00:00	09/29/12 06:43	100

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00



Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-25

Date Collected: 09/26/12 09:50

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-15

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 23:58	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 23:58	1.00
Ethylbenzene	176		1.00		ug/L		09/28/12 00:00	09/28/12 23:58	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 23:58	1.00
Xylenes, total	542		3.00		ug/L		09/28/12 00:00	09/28/12 23:58	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	102		75 - 120				09/28/12 00:00	09/28/12 23:58	1.00
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 23:58	1.00
4-Bromofluorobenzene	104		75 - 110				09/28/12 00:00	09/28/12 23:58	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-30

Date Collected: 09/26/12 09:25

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-16

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/29/12 00:22	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/29/12 00:22	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/29/12 00:22	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/29/12 00:22	1.00
Xylenes, total	3.21		3.00		ug/L		09/28/12 00:00	09/29/12 00:22	1.00
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Dibromofluoromethane		106		75 - 120			09/28/12 00:00	09/29/12 00:22	1.00
Toluene-d8		87		80 - 120			09/28/12 00:00	09/29/12 00:22	1.00
4-Bromofluorobenzene		103		75 - 110			09/28/12 00:00	09/29/12 00:22	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00



Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-33

Date Collected: 09/26/12 09:17

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thrusheim

Lab Sample ID: CVI1753-17

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.710		0.500		ug/L		09/28/12 00:00	09/28/12 11:18	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 11:18	1.00
Ethylbenzene	61.1		1.00		ug/L		09/28/12 00:00	09/28/12 11:18	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 11:18	1.00
Xylenes, total	273		3.00		ug/L		09/28/12 00:00	09/28/12 11:18	1.00
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Dibromofluoromethane	106			75 - 120			09/28/12 00:00	09/28/12 11:18	1.00
Toluene-d8	89			80 - 120			09/28/12 00:00	09/28/12 11:18	1.00
4-Bromofluorobenzene	106			75 - 110			09/28/12 00:00	09/28/12 11:18	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-34

Date Collected: 09/26/12 09:57

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-18

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 11:42	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 11:42	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 11:42	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 11:42	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 11:42	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	105		75 - 120				09/28/12 00:00	09/28/12 11:42	1.00
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 11:42	1.00
4-Bromofluorobenzene	100		75 - 110				09/28/12 00:00	09/28/12 11:42	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: TC-6D

Date Collected: 09/26/12 11:00

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thorshiem

Lab Sample ID: CVI1753-19

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<50.0		50.0		ug/L		09/28/12 00:00	09/28/12 15:16	100
2-Butanone (MEK)	<1000		1000		ug/L		09/28/12 00:00	09/28/12 15:16	100
Ethylbenzene	14900		100		ug/L		09/28/12 00:00	09/28/12 15:16	100
Toluene	<100		100		ug/L		09/28/12 00:00	09/28/12 15:16	100
Xylenes, total	54200		300		ug/L		09/28/12 00:00	09/28/12 15:16	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	100		75 - 120				09/28/12 00:00	09/28/12 15:16	100
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 15:16	100
4-Bromofluorobenzene	104		75 - 110				09/28/12 00:00	09/28/12 15:16	100

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00

Method: SW 7470A - Total Metals by SW 846 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000267		0.000267		mg/L		10/01/12 15:00	10/02/12 16:41	1.00

Method: SW 6020A - Total Metals by SW 846 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0171		0.00100		mg/L		09/28/12 11:50	10/03/12 01:57	1.00
Cadmium	<0.000500		0.000500		mg/L		09/28/12 11:50	10/03/12 01:57	1.00
Chromium	<0.00500		0.00500		mg/L		09/28/12 11:50	10/03/12 01:57	1.00
Lead	<0.000500		0.000500		mg/L		09/28/12 11:50	10/03/12 01:57	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: TC-7

Date Collected: 09/26/12 11:35

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-20

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 12:06	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 12:06	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 12:06	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 12:06	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 12:06	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	118		75 - 120				09/28/12 00:00	09/28/12 12:06	1.00
Toluene-d8	87		80 - 120				09/28/12 00:00	09/28/12 12:06	1.00
4-Bromofluorobenzene	100		75 - 110				09/28/12 00:00	09/28/12 12:06	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

1
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Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: TC-23

Date Collected: 09/26/12 09:52

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-21

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 19:13	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 19:13	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 19:13	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 19:13	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 19:13	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	110		75 - 120				09/28/12 00:00	09/28/12 19:13	1.00
Toluene-d8	87		80 - 120				09/28/12 00:00	09/28/12 19:13	1.00
4-Bromofluorobenzene	99		75 - 110				09/28/12 00:00	09/28/12 19:13	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: BUS

Date Collected: 09/26/12 09:00

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-22

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 19:37	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 19:37	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 19:37	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 19:37	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 19:37	1.00
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	111		75 - 120				09/28/12 00:00	09/28/12 19:37	1.00
Toluene-d8	88		80 - 120				09/28/12 00:00	09/28/12 19:37	1.00
4-Bromofluorobenzene	103		75 - 110				09/28/12 00:00	09/28/12 19:37	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: Neiss

Date Collected: 09/26/12 09:05

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-23

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 20:01	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 20:01	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 20:01	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 20:01	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 20:01	1.00
Surrogate		%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
Dibromofluoromethane		107		75 - 120			09/28/12 00:00	09/28/12 20:01	1.00
Toluene-d8		88		80 - 120			09/28/12 00:00	09/28/12 20:01	1.00
4-Bromofluorobenzene		99		75 - 110			09/28/12 00:00	09/28/12 20:01	1.00

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		10/01/12 16:40	10/01/12 16:55	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: Dup

Date Collected: 09/26/12 00:00

Date Received: 09/27/12 09:07

Sampler Name: Jeff Thursheim

Lab Sample ID: CVI1753-24

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 8260B - Volatile Organic Compounds

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.00		5.00		ug/L		09/29/12 00:00	09/29/12 10:41	10.0
2-Butanone (MEK)	<100		100		ug/L		09/29/12 00:00	09/29/12 10:41	10.0
Ethylbenzene	2440		10.0		ug/L		09/29/12 00:00	09/29/12 10:41	10.0
Toluene	<10.0		10.0		ug/L		09/29/12 00:00	09/29/12 10:41	10.0
Xylenes, total	9290		30.0		ug/L		09/29/12 00:00	09/29/12 10:41	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane	106		75 - 120				09/29/12 00:00	09/29/12 10:41	10.0
Toluene-d8	87		80 - 120				09/29/12 00:00	09/29/12 10:41	10.0
4-Bromofluorobenzene	105		75 - 110				09/29/12 00:00	09/29/12 10:41	10.0

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		09/28/12 11:51	09/28/12 11:55	1.00

Surrogate Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 8260B - Volatile Organic Compounds

Matrix: Ground Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (75-110)
CVI1753-01	MW-1	99	100	102
CVI1753-02	MW-5	105	88	102
CVI1753-03	GMW-3	105	90	101
CVI1753-04	GMW-7R	113	87	107
CVI1753-05	GMW-8	108	88	101
CVI1753-06	GMW-9R	104	87	104
CVI1753-07	GMW-13	105	86	103
CVI1753-08	GMW-15	101	86	104
CVI1753-08 - RE1	GMW-15	113	89	103
CVI1753-09	GMW-16	105	86	103
CVI1753-10	GMW-17	104	88	102
CVI1753-11	GMW-18	102	88	106
CVI1753-12	GMW-19	108	88	106
CVI1753-12 - RE1	GMW-19	111	86	102
CVI1753-13	GMW-20	106	88	106
CVI1753-14	GMW-21	104	88	105
CVI1753-14 - RE1	GMW-21	108	86	100
CVI1753-15	GMW-25	102	88	104
CVI1753-16	GMW-30	106	87	103
CVI1753-17	GMW-33	106	89	106
CVI1753-18	GMW-34	105	88	100
CVI1753-19	TC-6D	100	88	104
CVI1753-20	TC-7	118	87	100
CVI1753-21	TC-23	110	87	99
CVI1753-22	BUS	111	88	103
CVI1753-23	Neiss	107	88	99
CVI1753-24	Dup	106	87	105

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Method: SW 8260B - Volatile Organic Compounds

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (75-110)
12J0002-BLK1	Method Blank	101	99	100
12J0003-BLK1	Method Blank	109	90	102
12J0004-BLK1	Method Blank	110	88	100
12J0005-BLK1	Method Blank	105	87	101

Surrogate Legend

DBFM = Dibromofluoromethane

Toluene-d8 = Toluene-d8

BFB = 4-Bromofluorobenzene

Surrogate Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 8260B - Volatile Organic Compounds

Matrix: Water - NonPotable

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (75-120)	Toluene-d8 (80-120)	BFB (80-120)
12J0002-BS1	Lab Control Sample	99	100	106
12J0002-MS1	Matrix Spike	101	97	101
12J0002-MSD1	Matrix Spike Duplicate	102	96	99
12J0003-BS1	Lab Control Sample	103	90	104
12J0003-MS1	Matrix Spike	104	89	103
12J0003-MSD1	Matrix Spike Duplicate	103	89	106
12J0004-BS1	Lab Control Sample	108	88	102
12J0004-MS1	Neiss	109	88	102
12J0004-MSD1	Neiss	110	87	103
12J0005-BS1	Lab Control Sample	109	90	108
12J0005-MS1	Matrix Spike	105	89	105
12J0005-MSD1	Matrix Spike Duplicate	104	90	105

Surrogate Legend

DBFM = Dibromofluoromethane
Toluene-d8 = Toluene-d8
BFB = 4-Bromofluorobenzene

1
2
3
4
5
6
7
8
9
10
11
12
13

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 8260B - Volatile Organic Compounds

Lab Sample ID: 12J0002-BLK1
Matrix: Water - NonPotable
Analysis Batch: 12J0002

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12J0002_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier					Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 19:22	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 19:22	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 19:22	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 19:22	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 19:22	1.00

Surrogate	Blank	Blank	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane	101		75 - 120	09/28/12 00:00	09/28/12 19:22	1.00
Toluene-d8	99		80 - 120	09/28/12 00:00	09/28/12 19:22	1.00
4-Bromofluorobenzene	100		75 - 110	09/28/12 00:00	09/28/12 19:22	1.00

Lab Sample ID: 12J0002-BS1
Matrix: Water - NonPotable
Analysis Batch: 12J0002

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12J0002_P

Analyte	Spike		LCS	LCS	D	%Rec	Limits
	Added	Result	Qualifier	Unit			
Benzene	20.0	20.0		ug/L		100	70 - 130
2-Butanone (MEK)	20.0	19.7		ug/L		98	55 - 140
Ethylbenzene	20.0	21.6		ug/L		108	70 - 130
Toluene	20.0	21.2		ug/L		106	70 - 135
Xylenes, total	60.0	64.5		ug/L		108	70 - 130

Surrogate	LCS	LCS	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane	99		75 - 120	09/28/12 00:00	09/28/12 19:22	1.00
Toluene-d8	100		80 - 120	09/28/12 00:00	09/28/12 19:22	1.00
4-Bromofluorobenzene	106		80 - 120	09/28/12 00:00	09/28/12 19:22	1.00

Lab Sample ID: 12J0002-MS1
Matrix: Water - NonPotable
Analysis Batch: 12J0002

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 12J0002_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier	Unit		
Benzene	0.0800		20.0	17.8		ug/L	88	50 - 130
2-Butanone (MEK)	0.660		20.0	15.6		ug/L	75	45 - 140
Ethylbenzene	0.100		20.0	18.9		ug/L	94	45 - 135
Toluene	0.0900		20.0	18.5		ug/L	92	45 - 135
Xylenes, total	0.250		60.0	56.4		ug/L	94	40 - 135

Surrogate	Matrix Spike	Matrix Spike	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane	101		75 - 120	09/28/12 00:00	09/28/12 19:22	1.00
Toluene-d8	97		80 - 120	09/28/12 00:00	09/28/12 19:22	1.00
4-Bromofluorobenzene	101		80 - 120	09/28/12 00:00	09/28/12 19:22	1.00

Lab Sample ID: 12J0002-MSD1
Matrix: Water - NonPotable
Analysis Batch: 12J0002

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total
Prep Batch: 12J0002_P

Analyte	Sample	Sample	Spike	Matrix Spike Dup	Matrix Spike Dup	D	%Rec	RPD
	Result	Qualifier	Added	Result	Qualifier	Unit		
Benzene	0.0800		20.0	17.7		ug/L	88	50 - 130

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 8260B - Volatile Organic Compounds (Continued)

Lab Sample ID: 12J0002-MSD1

Matrix: Water - NonPotable

Analysis Batch: 12J0002

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 12J0002_P

Analyte	Sample	Sample	Spike	Matrix	Spike	Matrix	Spike	Matrix	%Rec.	RPD	
	Result	Qualifier	Added	Result	Qualifier	Unit	D	Result	Limits	RPD	
2-Butanone (MEK)	0.660		20.0	16.5		ug/L		79	45 - 140	6	35
Ethylbenzene	0.100		20.0	18.3		ug/L		91	45 - 135	3	20
Toluene	0.0900		20.0	18.2		ug/L		90	45 - 135	2	20
Xylenes, total	0.250		60.0	54.9		ug/L		91	40 - 135	3	20

Matrix Spike Dup **Matrix Spike Dup**

Surrogate	Matrix	Spike	Matrix	Spike	Matrix	Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane		102		75 - 120					
Toluene-d8		96		80 - 120					
4-Bromofluorobenzene		99		80 - 120					

Lab Sample ID: 12J0003-BLK1

Matrix: Water - NonPotable

Analysis Batch: 12J0003

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0003_P

Analyte	Blank	Blank	Blank	Blank	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Result	Qualifier	RL			Prepared	Analyzed	Dil Fac
Benzene	<0.500				0.500	ug/L		09/28/12 00:00	09/28/12 06:09	1.00
2-Butanone (MEK)	<10.0				10.0	ug/L		09/28/12 00:00	09/28/12 06:09	1.00
Ethylbenzene	<1.00				1.00	ug/L		09/28/12 00:00	09/28/12 06:09	1.00
Toluene	<1.00				1.00	ug/L		09/28/12 00:00	09/28/12 06:09	1.00
Xylenes, total	<3.00				3.00	ug/L		09/28/12 00:00	09/28/12 06:09	1.00

Surrogate	Blank	Blank	Blank	Blank	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Result	Qualifier	RL			Prepared	Analyzed	Dil Fac
Dibromofluoromethane		109		75 - 120				09/28/12 00:00	09/28/12 06:09	1.00
Toluene-d8		90		80 - 120				09/28/12 00:00	09/28/12 06:09	1.00
4-Bromofluorobenzene		102		75 - 110				09/28/12 00:00	09/28/12 06:09	1.00

Lab Sample ID: 12J0003-BS1

Matrix: Water - NonPotable

Analysis Batch: 12J0003

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0003_P

Analyte	Spike	LCS	LCS	Blank	Blank	Blank	Blank	%Rec.	
	Added	Result	Qualifier	Result	Qualifier	Unit	D	%Rec	Limits
Benzene		20.0		19.2		ug/L		96	70 - 130
2-Butanone (MEK)		20.0		17.6		ug/L		88	55 - 140
Ethylbenzene		20.0		18.1		ug/L		91	70 - 130
Toluene		20.0		18.6		ug/L		93	70 - 135
Xylenes, total		60.0		55.5		ug/L		92	70 - 130

Surrogate	LCS	LCS	Blank	Blank	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Result	Qualifier	RL			Prepared	Analyzed	Dil Fac
Dibromofluoromethane		103		75 - 120				09/28/12 00:00	09/28/12 06:09	1.00
Toluene-d8		90		80 - 120				09/28/12 00:00	09/28/12 06:09	1.00
4-Bromofluorobenzene		104		80 - 120				09/28/12 00:00	09/28/12 06:09	1.00

Lab Sample ID: 12J0003-MS1

Matrix: Water - NonPotable

Analysis Batch: 12J0003

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12J0003_P

Analyte	Sample	Sample	Spike	Matrix	Matrix	Matrix	%Rec.		
	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits
Benzene	0.0800		20.0	18.9		ug/L		94	50 - 130
2-Butanone (MEK)	1.61		20.0	19.7		ug/L		91	45 - 140

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 8260B - Volatile Organic Compounds (Continued)

Lab Sample ID: 12J0003-MS1

Matrix: Water - NonPotable

Analysis Batch: 12J0003

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12J0003_P

%Rec.

Limits

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	Limits
Ethylbenzene	0.0600		20.0	17.5		ug/L		87	45 - 135
Toluene	0.0600		20.0	17.7		ug/L		88	45 - 135
Xylenes, total	0.180		60.0	55.0		ug/L		91	40 - 135
Surrogate									
<i>Dibromofluoromethane</i>	104			75 - 120					
<i>Toluene-d8</i>	89			80 - 120					
<i>4-Bromofluorobenzene</i>	103			80 - 120					

Lab Sample ID: 12J0003-MSD1

Matrix: Water - NonPotable

Analysis Batch: 12J0003

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 12J0003_P

%Rec.

RPD

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Benzene	0.0800		20.0	18.2		ug/L		91	50 - 130	4	20
2-Butanone (MEK)	1.61		20.0	18.2		ug/L		83	45 - 140	8	35
Ethylbenzene	0.0600		20.0	17.3		ug/L		86	45 - 135	1	20
Toluene	0.0600		20.0	17.4		ug/L		87	45 - 135	2	20
Xylenes, total	0.180		60.0	52.8		ug/L		88	40 - 135	4	20
Surrogate											
<i>Dibromofluoromethane</i>	103			75 - 120							
<i>Toluene-d8</i>	89			80 - 120							
<i>4-Bromofluorobenzene</i>	106			80 - 120							

Lab Sample ID: 12J0004-BLK1

Matrix: Water - NonPotable

Analysis Batch: 12J0004

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0004_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500		ug/L		09/28/12 00:00	09/28/12 17:38	1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/28/12 00:00	09/28/12 17:38	1.00
Ethylbenzene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 17:38	1.00
Toluene	<1.00		1.00		ug/L		09/28/12 00:00	09/28/12 17:38	1.00
Xylenes, total	<3.00		3.00		ug/L		09/28/12 00:00	09/28/12 17:38	1.00
Surrogate									
<i>Dibromofluoromethane</i>	110		75 - 120				09/28/12 00:00	09/28/12 17:38	1.00
<i>Toluene-d8</i>	88		80 - 120				09/28/12 00:00	09/28/12 17:38	1.00
<i>4-Bromofluorobenzene</i>	100		75 - 110				09/28/12 00:00	09/28/12 17:38	1.00

Lab Sample ID: 12J0004-BS1

Matrix: Water - NonPotable

Analysis Batch: 12J0004

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0004_P

%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Benzene	20.0	19.7		ug/L		99	70 - 130
2-Butanone (MEK)	20.0	23.8		ug/L		119	55 - 140
Ethylbenzene	20.0	18.5		ug/L		92	70 - 130

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 8260B - Volatile Organic Compounds (Continued)

Lab Sample ID: 12J0004-BS1

Matrix: Water - NonPotable

Analysis Batch: 12J0004

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0004_P

%Rec.

Analyte

Analyte	Spike Added	LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Toluene	20.0	18.9		ug/L		94	70 - 135
Xylenes, total	60.0	55.7		ug/L		93	70 - 130

LCS LCS

Surrogate %Recovery Qualifier Limits

Dibromofluoromethane

108 75 - 120

Toluene-d8

88 80 - 120

4-Bromofluorobenzene

102 80 - 120

Lab Sample ID: 12J0004-MS1

Matrix: Water - NonPotable

Analysis Batch: 12J0004

Client Sample ID: Neiss

Prep Type: Total

Prep Batch: 12J0004_P

%Rec.

Analyte

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike		Unit	D	%Rec	Limits
				Result	Qualifier				
Benzene	<0.500		20.0	21.3		ug/L		107	50 - 130
2-Butanone (MEK)	<10.0		20.0	23.0		ug/L		110	45 - 140
Ethylbenzene	<1.00		20.0	20.9		ug/L		105	45 - 135
Toluene	<1.00		20.0	19.3		ug/L		97	45 - 135
Xylenes, total	<3.00		60.0	65.4		ug/L		109	40 - 135

Matrix Spike Matrix Spike

Surrogate %Recovery Qualifier Limits

Dibromofluoromethane

109 75 - 120

Toluene-d8

88 80 - 120

4-Bromofluorobenzene

102 80 - 120

Lab Sample ID: 12J0004-MSD1

Matrix: Water - NonPotable

Analysis Batch: 12J0004

Client Sample ID: Neiss

Prep Type: Total

Prep Batch: 12J0004_P

%Rec.

Analyte

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dup		Unit	D	%Rec	Limits	RPD	Limit
				Result	Qualifier						
Benzene	<0.500		20.0	20.4		ug/L		102	50 - 130	5	20
2-Butanone (MEK)	<10.0		20.0	22.8		ug/L		109	45 - 140	1	35
Ethylbenzene	<1.00		20.0	20.1		ug/L		100	45 - 135	4	20
Toluene	<1.00		20.0	19.0		ug/L		95	45 - 135	2	20
Xylenes, total	<3.00		60.0	63.3		ug/L		106	40 - 135	3	20

Matrix Spike Dup Matrix Spike Dup

Surrogate %Recovery Qualifier Limits

Dibromofluoromethane

110 75 - 120

Toluene-d8

87 80 - 120

4-Bromofluorobenzene

103 80 - 120

Lab Sample ID: 12J0005-BLK1

Matrix: Water - NonPotable

Analysis Batch: 12J0005

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0005_P

Dil Fac

Analyte

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared		Analyzed		Dil Fac
							Prepared	Analyzed	Prepared	Analyzed	
Benzene	<0.500		0.500		ug/L		09/29/12 00:00	09/29/12 05:08			1.00
2-Butanone (MEK)	<10.0		10.0		ug/L		09/29/12 00:00	09/29/12 05:08			1.00
Ethylbenzene	<1.00		1.00		ug/L		09/29/12 00:00	09/29/12 05:08			1.00
Toluene	<1.00		1.00		ug/L		09/29/12 00:00	09/29/12 05:08			1.00

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 8260B - Volatile Organic Compounds (Continued)

Lab Sample ID: 12J0005-BLK1

Matrix: Water - NonPotable

Analysis Batch: 12J0005

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12J0005_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit ug/L	D	Prepared 09/29/12 00:00	Analyzed 09/29/12 05:08	Dil Fac 1.00
Xylenes, total	<3.00		3.00						
Surrogate									
Dibromofluoromethane									
	105		75 - 120				09/29/12 00:00	09/29/12 05:08	1.00
Toluene-d8									
	87		80 - 120				09/29/12 00:00	09/29/12 05:08	1.00
4-Bromofluorobenzene									
	101		75 - 110				09/29/12 00:00	09/29/12 05:08	1.00

Lab Sample ID: 12J0005-BS1

Matrix: Water - NonPotable

Analysis Batch: 12J0005

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12J0005_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit ug/L	D	%Rec	Limits
Benzene	20.0	21.0		ug/L		105	70 - 130
2-Butanone (MEK)	20.0	20.8		ug/L		104	55 - 140
Ethylbenzene	20.0	19.7		ug/L		98	70 - 130
Toluene	20.0	19.6		ug/L		98	70 - 135
Xylenes, total	60.0	59.2		ug/L		99	70 - 130
Surrogate							
Dibromofluoromethane							
	109		75 - 120				
Toluene-d8							
	90		80 - 120				
4-Bromofluorobenzene							
	108		80 - 120				

Lab Sample ID: 12J0005-MS1

Matrix: Water - NonPotable

Analysis Batch: 12J0005

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12J0005_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit ug/L	D	%Rec	Limits
Benzene	0.0100		20.0	17.3		ug/L		87	50 - 130
2-Butanone (MEK)	0.460		20.0	19.3		ug/L		94	45 - 140
Ethylbenzene	0.0600		20.0	17.4		ug/L		86	45 - 135
Toluene	0.0100		20.0	16.9		ug/L		85	45 - 135
Xylenes, total	<0.130		60.0	55.6		ug/L		93	40 - 135
Surrogate									
Dibromofluoromethane									
	105		75 - 120						
Toluene-d8									
	89		80 - 120						
4-Bromofluorobenzene									
	105		80 - 120						

Lab Sample ID: 12J0005-MSD1

Matrix: Water - NonPotable

Analysis Batch: 12J0005

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 12J0005_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Dupl Result	Matrix Spike Dupl Qualifier	Unit ug/L	D	%Rec	RPD	Limit
Benzene	0.0100		20.0	16.4		ug/L		82	50 - 130	5 20
2-Butanone (MEK)	0.460		20.0	18.5		ug/L		90	45 - 140	5 35
Ethylbenzene	0.0600		20.0	16.5		ug/L		82	45 - 135	5 20
Toluene	0.0100		20.0	15.8		ug/L		79	45 - 135	7 20
Xylenes, total	<0.130		60.0	52.2		ug/L		87	40 - 135	6 20

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 8260B - Volatile Organic Compounds (Continued)

Lab Sample ID: 12J0005-MSD1
Matrix: Water - NonPotable
Analysis Batch: 12J0005

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total
Prep Batch: 12J0005_P

Surrogate	Matrix Spike Dup		Matrix Spike Dup	
	%Recovery	Qualifier	Limits	
Dibromofluoromethane	104		75 - 120	
Toluene-d8	90		80 - 120	
4-Bromofluorobenzene	105		80 - 120	

Method: SW 7470A - Total Metals by SW 846 Series Methods

Lab Sample ID: 12J0089-BLK1
Matrix: Water - NonPotable
Analysis Batch: 12J0089

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12J0089_P

Analyte	Blank		Blank		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Mercury	<0.000267				0.000267		mg/L		10/01/12 15:00	10/02/12 16:25	1.00

Lab Sample ID: 12J0089-BS1
Matrix: Water - NonPotable
Analysis Batch: 12J0089

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 12J0089_P

Analyte	Spike		LCS		Unit	D	%Rec	Limits
	Added	Result	Result	Qualifier				
Mercury	0.00167		0.00155		mg/L		93	80 - 120

Lab Sample ID: 12J0089-MS1
Matrix: Water - NonPotable
Analysis Batch: 12J0089

Client Sample ID: GMW-7R
Prep Type: Total
Prep Batch: 12J0089_P

Analyte	Sample		Spike		Matrix Spike		Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Mercury	<0.000267		0.00167		0.00169		mg/L		102	70 - 130

Lab Sample ID: 12J0089-MSD1
Matrix: Water - NonPotable
Analysis Batch: 12J0089

Client Sample ID: GMW-7R
Prep Type: Total
Prep Batch: 12J0089_P

Analyte	Sample		Spike		Matrix Spike Dup		Unit	D	%Rec	RPD
	Result	Qualifier	Added	Result	Qualifier					
Mercury	<0.000267		0.00167		0.00171		mg/L		103	70 - 130

Method: SW 6020A - Total Metals by SW 846 Series Methods

Lab Sample ID: 12I1403-BLK1
Matrix: Water - NonPotable
Analysis Batch: 12I1403

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 12I1403_P

Analyte	Blank		Blank		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier									
Arsenic	<0.00100				0.00100		mg/L		09/28/12 11:50	10/03/12 00:35	1.00
Cadmium	<0.000500				0.000500		mg/L		09/28/12 11:50	10/03/12 00:35	1.00
Chromium	<0.00500				0.00500		mg/L		09/28/12 11:50	10/03/12 00:35	1.00
Lead	<0.000500				0.000500		mg/L		09/28/12 11:50	10/03/12 00:35	1.00

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method: SW 6020A - Total Metals by SW 846 Series Methods (Continued)

Lab Sample ID: 12I1403-BS1

Matrix: Water - NonPotable

Analysis Batch: 12I1403

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12I1403_P

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Lab Sample ID: 12I1403-MS1

Matrix: Water - NonPotable

Analysis Batch: 12I1403

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12I1403_P

14

Lab Sample ID: 12I1403-MS2

Matrix: Water - NonPotable

Analysis Batch: 12I1403

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12I1403_P

15

Lab Sample ID: 12I1403-MSD1

Matrix: Water - NonPotable

Analysis Batch: 12I1403

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 12I1403_P

16

Lab Sample ID: 12I1403-DUP1

Matrix: Water - NonPotable

Analysis Batch: 12I1403

Client Sample ID: Duplicate

Prep Type: Total

Prep Batch: 12I1403_P

17

Analyste

Result

Qualifier

Sample

Sample

Spike

Matrix Spike Dup

Matrix Spike Dup

%Rec.

Limits

RPD

Limit

Analyste

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Qualifier

Added

Result

Qualifier

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Qualifier

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RPD

Analyste

Result

Qualifier

Result

Qualifier

Unit

QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

GCMS Volatiles

Analysis Batch: 12I1404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVI1753-04	GMW-7R	Total	Ground Water	SW 9041A	12I1404_P
CVI1753-06	GMW-9R	Total	Ground Water	SW 9041A	12I1404_P
CVI1753-07	GMW-13	Total	Ground Water	SW 9041A	12I1404_P
CVI1753-08	GMW-15	Total	Ground Water	SW 9041A	12I1404_P
CVI1753-09	GMW-16	Total	Ground Water	SW 9041A	12I1404_P
CVI1753-13	GMW-20	Total	Ground Water	SW 9041A	12I1404_P
CVI1753-14	GMW-21	Total	Ground Water	SW 9041A	12I1404_P
CVI1753-19	TC-6D	Total	Ground Water	SW 9041A	12I1404_P
CVI1753-24	Dup	Total	Ground Water	SW 9041A	12I1404_P

Analysis Batch: 12J0002

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0002-BLK1	Method Blank	Total	Water - NonPotable	SW 8260B	12J0002_P
12J0002-BS1	Lab Control Sample	Total	Water - NonPotable	SW 8260B	12J0002_P
12J0002-MS1	Matrix Spike	Total	Water - NonPotable	SW 8260B	12J0002_P
12J0002-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 8260B	12J0002_P
CVI1753-01	MW-1	Total	Ground Water	SW 8260B	12J0002_P

Analysis Batch: 12J0003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0003-BLK1	Method Blank	Total	Water - NonPotable	SW 8260B	12J0003_P
12J0003-BS1	Lab Control Sample	Total	Water - NonPotable	SW 8260B	12J0003_P
12J0003-MS1	Matrix Spike	Total	Water - NonPotable	SW 8260B	12J0003_P
12J0003-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 8260B	12J0003_P
CVI1753-02	MW-5	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-03	GMW-3	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-04	GMW-7R	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-05	GMW-8	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-06	GMW-9R	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-07	GMW-13	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-08	GMW-15	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-09	GMW-16	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-10	GMW-17	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-11	GMW-18	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-12	GMW-19	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-13	GMW-20	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-14	GMW-21	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-17	GMW-33	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-18	GMW-34	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-19	TC-6D	Total	Ground Water	SW 8260B	12J0003_P
CVI1753-20	TC-7	Total	Ground Water	SW 8260B	12J0003_P

Analysis Batch: 12J0004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0004-BLK1	Method Blank	Total	Water - NonPotable	SW 8260B	12J0004_P



QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

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GCMS Volatiles (Continued)

Analysis Batch: 12J0004 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0004-BS1	Lab Control Sample	Total	Water - NonPotable	SW 8260B	12J0004_P
12J0004-MS1	Neiss	Total	Water - NonPotable	SW 8260B	12J0004_P
12J0004-MSD1	Neiss	Total	Water - NonPotable	SW 8260B	12J0004_P
CVI1753-12 - RE1	GMW-19	Total	Ground Water	SW 8260B	12J0004_P
CVI1753-15	GMW-25	Total	Ground Water	SW 8260B	12J0004_P
CVI1753-16	GMW-30	Total	Ground Water	SW 8260B	12J0004_P
CVI1753-21	TC-23	Total	Ground Water	SW 8260B	12J0004_P
CVI1753-22	BUS	Total	Ground Water	SW 8260B	12J0004_P
CVI1753-23	Neiss	Total	Ground Water	SW 8260B	12J0004_P

Analysis Batch: 12J0005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0005-BLK1	Method Blank	Total	Water - NonPotable	SW 8260B	12J0005_P
12J0005-BS1	Lab Control Sample	Total	Water - NonPotable	SW 8260B	12J0005_P
12J0005-MS1	Matrix Spike	Total	Water - NonPotable	SW 8260B	12J0005_P
12J0005-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 8260B	12J0005_P
CVI1753-08 - RE1	GMW-15	Total	Ground Water	SW 8260B	12J0005_P
CVI1753-14 - RE1	GMW-21	Total	Ground Water	SW 8260B	12J0005_P
CVI1753-24	Dup	Total	Ground Water	SW 8260B	12J0005_P

Analysis Batch: 12J0063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVI1753-01	MW-1	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-02	MW-5	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-03	GMW-3	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-05	GMW-8	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-10	GMW-17	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-11	GMW-18	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-12	GMW-19	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-15	GMW-25	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-16	GMW-30	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-17	GMW-33	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-18	GMW-34	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-20	TC-7	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-21	TC-23	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-22	BUS	Total	Ground Water	SW 9041A	12J0063_P
CVI1753-23	Neiss	Total	Ground Water	SW 9041A	12J0063_P

Prep Batch: 12I1404_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVI1753-04	GMW-7R	Total	Ground Water	Default Prep VOC	
CVI1753-06	GMW-9R	Total	Ground Water	Default Prep VOC	
CVI1753-07	GMW-13	Total	Ground Water	Default Prep VOC	
CVI1753-08	GMW-15	Total	Ground Water	Default Prep VOC	

QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

GCMS Volatiles (Continued)

Prep Batch: 12I1404_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVI1753-09	GMW-16	Total	Ground Water	Default Prep VOC	1
CVI1753-13	GMW-20	Total	Ground Water	Default Prep VOC	2
CVI1753-14	GMW-21	Total	Ground Water	Default Prep VOC	3
CVI1753-19	TC-6D	Total	Ground Water	Default Prep VOC	4
CVI1753-24	Dup	Total	Ground Water	Default Prep VOC	5

Prep Batch: 12J0002_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0002-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B	10
12J0002-BS1	Lab Control Sample	Total	Water - NonPotable	SW 5030B	11
12J0002-MS1	Matrix Spike	Total	Water - NonPotable	SW 5030B	12
12J0002-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 5030B	13
CVI1753-01	MW-1	Total	Ground Water	SW 5030B	

Prep Batch: 12J0003_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0003-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B	
12J0003-BS1	Lab Control Sample	Total	Water - NonPotable	SW 5030B	
12J0003-MS1	Matrix Spike	Total	Water - NonPotable	SW 5030B	
12J0003-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 5030B	
CVI1753-02	MW-5	Total	Ground Water	SW 5030B	
CVI1753-03	GMW-3	Total	Ground Water	SW 5030B	
CVI1753-04	GMW-7R	Total	Ground Water	SW 5030B	
CVI1753-05	GMW-8	Total	Ground Water	SW 5030B	
CVI1753-06	GMW-9R	Total	Ground Water	SW 5030B	
CVI1753-07	GMW-13	Total	Ground Water	SW 5030B	
CVI1753-08	GMW-15	Total	Ground Water	SW 5030B	
CVI1753-09	GMW-16	Total	Ground Water	SW 5030B	
CVI1753-10	GMW-17	Total	Ground Water	SW 5030B	
CVI1753-11	GMW-18	Total	Ground Water	SW 5030B	
CVI1753-12	GMW-19	Total	Ground Water	SW 5030B	
CVI1753-13	GMW-20	Total	Ground Water	SW 5030B	
CVI1753-14	GMW-21	Total	Ground Water	SW 5030B	
CVI1753-17	GMW-33	Total	Ground Water	SW 5030B	
CVI1753-18	GMW-34	Total	Ground Water	SW 5030B	
CVI1753-19	TC-6D	Total	Ground Water	SW 5030B	
CVI1753-20	TC-7	Total	Ground Water	SW 5030B	

Prep Batch: 12J0004_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0004-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B	



QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

GCMS Volatiles (Continued)

Prep Batch: 12J0004_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0004-BS1	Lab Control Sample	Total	Water - NonPotable	SW 5030B	1
12J0004-MS1	Neiss	Total	Water - NonPotable	SW 5030B	2
12J0004-MSD1	Neiss	Total	Water - NonPotable	SW 5030B	3
CVI1753-12 - RE1	GMW-19	Total	Ground Water	SW 5030B	4
CVI1753-15	GMW-25	Total	Ground Water	SW 5030B	5
CVI1753-16	GMW-30	Total	Ground Water	SW 5030B	6
CVI1753-21	TC-23	Total	Ground Water	SW 5030B	7
CVI1753-22	BUS	Total	Ground Water	SW 5030B	8
CVI1753-23	Neiss	Total	Ground Water	SW 5030B	9

Prep Batch: 12J0005_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0005-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B	10
12J0005-BS1	Lab Control Sample	Total	Water - NonPotable	SW 5030B	11
12J0005-MS1	Matrix Spike	Total	Water - NonPotable	SW 5030B	12
12J0005-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 5030B	13
CVI1753-08 - RE1	GMW-15	Total	Ground Water	SW 5030B	
CVI1753-14 - RE1	GMW-21	Total	Ground Water	SW 5030B	
CVI1753-24	Dup	Total	Ground Water	SW 5030B	

Prep Batch: 12J0063_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVI1753-01	MW-1	Total	Ground Water	Default Prep VOC	
CVI1753-02	MW-5	Total	Ground Water	Default Prep VOC	
CVI1753-03	GMW-3	Total	Ground Water	Default Prep VOC	
CVI1753-05	GMW-8	Total	Ground Water	Default Prep VOC	
CVI1753-10	GMW-17	Total	Ground Water	Default Prep VOC	
CVI1753-11	GMW-18	Total	Ground Water	Default Prep VOC	
CVI1753-12	GMW-19	Total	Ground Water	Default Prep VOC	
CVI1753-15	GMW-25	Total	Ground Water	Default Prep VOC	
CVI1753-16	GMW-30	Total	Ground Water	Default Prep VOC	
CVI1753-17	GMW-33	Total	Ground Water	Default Prep VOC	
CVI1753-18	GMW-34	Total	Ground Water	Default Prep VOC	
CVI1753-20	TC-7	Total	Ground Water	Default Prep VOC	
CVI1753-21	TC-23	Total	Ground Water	Default Prep VOC	
CVI1753-22	BUS	Total	Ground Water	Default Prep VOC	

QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

GCMS Volatiles (Continued)

Prep Batch: 12J0063_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVI1753-23	Neiss	Total	Ground Water	Default Prep VOC	

Mercury

Analysis Batch: 12J0089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0089-BLK1	Method Blank	Total	Water - NonPotable	SW 7470A	12J0089_P
12J0089-BS1	Lab Control Sample	Total	Water - NonPotable	SW 7470A	12J0089_P
12J0089-MS1	GMW-7R	Total	Water - NonPotable	SW 7470A	12J0089_P
12J0089-MSD1	GMW-7R	Total	Water - NonPotable	SW 7470A	12J0089_P
CVI1753-04	GMW-7R	Total	Ground Water	SW 7470A	12J0089_P
CVI1753-06	GMW-9R	Total	Ground Water	SW 7470A	12J0089_P
CVI1753-08	GMW-15	Total	Ground Water	SW 7470A	12J0089_P
CVI1753-19	TC-6D	Total	Ground Water	SW 7470A	12J0089_P

Prep Batch: 12J0089_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12J0089-BLK1	Method Blank	Total	Water - NonPotable	EPA 245.2/SW 7470A Prep	
12J0089-BS1	Lab Control Sample	Total	Water - NonPotable	EPA 245.2/SW 7470A Prep	
12J0089-MS1	GMW-7R	Total	Water - NonPotable	EPA 245.2/SW 7470A Prep	
12J0089-MSD1	GMW-7R	Total	Water - NonPotable	EPA 245.2/SW 7470A Prep	
CVI1753-04	GMW-7R	Total	Ground Water	EPA 245.2/SW 7470A Prep	
CVI1753-06	GMW-9R	Total	Ground Water	EPA 245.2/SW 7470A Prep	
CVI1753-08	GMW-15	Total	Ground Water	EPA 245.2/SW 7470A Prep	
CVI1753-19	TC-6D	Total	Ground Water	EPA 245.2/SW 7470A Prep	

Metals-ICPMS

Analysis Batch: 12I1403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12I1403-BLK1	Method Blank	Total	Water - NonPotable	SW 6020A	12I1403_P
12I1403-BS1	Lab Control Sample	Total	Water - NonPotable	SW 6020A	12I1403_P
12I1403-DUP1	Duplicate	Total	Water - NonPotable	SW 6020A	12I1403_P
12I1403-MS1	Matrix Spike	Total	Water - NonPotable	SW 6020A	12I1403_P
12I1403-MS2	Matrix Spike	Total	Water - NonPotable	SW 6020A	12I1403_P
12I1403-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 6020A	12I1403_P
CVI1753-04	GMW-7R	Total	Ground Water	SW 6020A	12I1403_P



QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Metals-ICPMS (Continued)

Analysis Batch: 12I1403 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVI1753-06	GMW-9R	Total	Ground Water	SW 6020A	12I1403_P
CVI1753-08	GMW-15	Total	Ground Water	SW 6020A	12I1403_P
CVI1753-19	TC-6D	Total	Ground Water	SW 6020A	12I1403_P

Prep Batch: 12I1403_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12I1403-BLK1	Method Blank	Total	Water - NonPotable	SW 3010A	8
12I1403-BS1	Lab Control Sample	Total	Water - NonPotable	SW 3010A	9
12I1403-DUP1	Duplicate	Total	Water - NonPotable	SW 3010A	10
12I1403-MS1	Matrix Spike	Total	Water - NonPotable	SW 3010A	11
12I1403-MS2	Matrix Spike	Total	Water - NonPotable	SW 3010A	12
12I1403-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 3010A	13
CVI1753-04	GMW-7R	Total	Ground Water	SW 3010A	
CVI1753-06	GMW-9R	Total	Ground Water	SW 3010A	
CVI1753-08	GMW-15	Total	Ground Water	SW 3010A	
CVI1753-19	TC-6D	Total	Ground Water	SW 3010A	

Lab Chronicle

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: MW-1

Date Collected: 09/26/12 11:38
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-01

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0002_P	09/29/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0002	09/29/12 02:31	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: MW-5

Date Collected: 09/26/12 09:49
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-02

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 08:08	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: GMW-3

Date Collected: 09/26/12 11:24
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-03

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 08:32	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: GMW-7R

Date Collected: 09/26/12 09:46
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-04

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		10.0			12J0003	09/28/12 12:29	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF
Total	Prep	EPA 245.2/SW 7470A Prep		1.33	30 mL	40 mL	12J0089_P	10/01/12 15:00	OAD	TAL CF
Total	Analysis	SW 7470A		1.00			12J0089	10/02/12 16:28	CJT	TAL CF
Total	Prep	SW 3010A		1.00	50 mL	50 mL	12I1403_P	09/28/12 11:50	JDG	TAL CF
Total	Analysis	SW 6020A		1.00			12I1403	10/03/12 01:37	LBB	TAL CF

Lab Chronicle

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-8

Date Collected: 09/26/12 11:17

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-05

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 08:55	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: GMW-9R

Date Collected: 09/26/12 11:57

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-06

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		100			12J0003	09/28/12 14:28	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF
Total	Prep	EPA 245.2/SW 7470A Prep		1.33	30 mL	40 mL	12J0089_P	10/01/12 15:00	OAD	TAL CF
Total	Analysis	SW 7470A		1.00			12J0089	10/02/12 16:33	CJT	TAL CF
Total	Prep	SW 3010A		1.00	50 mL	50 mL	12I1403_P	09/28/12 11:50	JDG	TAL CF
Total	Analysis	SW 6020A		1.00			12I1403	10/03/12 01:43	LBB	TAL CF

Client Sample ID: GMW-13

Date Collected: 09/26/12 11:47

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-07

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		100			12J0003	09/28/12 14:52	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF

Client Sample ID: GMW-15

Date Collected: 09/26/12 10:00

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-08

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		20.0			12J0003	09/28/12 14:05	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF
Total	Prep	SW 5030B	RE1	1.00	5 mL	5 mL	12J0005_P	09/29/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B	RE1	100			12J0005	09/29/12 07:07	SJN	TAL CF
Total	Prep	EPA 245.2/SW 7470A Prep		1.33	30 mL	40 mL	12J0089_P	10/01/12 15:00	OAD	TAL CF
Total	Analysis	SW 7470A		1.00			12J0089	10/02/12 16:35	CJT	TAL CF
Total	Prep	SW 3010A		1.00	50 mL	50 mL	12I1403_P	09/28/12 11:50	JDG	TAL CF

Lab Chronicle

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-15

Date Collected: 09/26/12 10:00

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-08

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Analysis	SW 6020A		1.00			12I1403	10/03/12 01:50	LBB	TAL CF

Client Sample ID: GMW-16

Date Collected: 09/26/12 10:30

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-09

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		10.0			12J0003	09/28/12 12:53	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF

Client Sample ID: GMW-17

Date Collected: 09/26/12 10:05

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-10

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 09:19	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: GMW-18

Date Collected: 09/26/12 10:02

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-11

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 09:43	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: GMW-19

Date Collected: 09/26/12 09:38

Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-12

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 10:07	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF
Total	Prep	SW 5030B	RE1	1.00	5 mL	5 mL	12J0004_P	09/29/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B	RE1	20.0			12J0004	09/29/12 00:46	SJN	TAL CF

Lab Chronicle

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-20

Date Collected: 09/26/12 09:27
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-13

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		10.0			12J0003	09/28/12 13:17	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF

Client Sample ID: GMW-21

Date Collected: 09/26/12 09:36
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-14

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		10.0			12J0003	09/28/12 13:41	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF
Total	Prep	SW 5030B	RE1	1.00	5 mL	5 mL	12J0005_P	09/29/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B	RE1	100			12J0005	09/29/12 06:43	SJN	TAL CF

Client Sample ID: GMW-25

Date Collected: 09/26/12 09:50
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-15

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0004_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0004	09/28/12 23:58	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: GMW-30

Date Collected: 09/26/12 09:25
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-16

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0004_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0004	09/29/12 00:22	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: GMW-33

Date Collected: 09/26/12 09:17
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-17

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 11:18	SJN	TAL CF

Lab Chronicle

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: GMW-33

Date Collected: 09/26/12 09:17
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-17

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: GMW-34

Date Collected: 09/26/12 09:57
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-18

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 11:42	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: TC-6D

Date Collected: 09/26/12 11:00
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-19

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		100			12J0003	09/28/12 15:16	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF
Total	Prep	EPA 245.2/SW 7470A Prep		1.33	30 mL	40 mL	12J0089_P	10/01/12 15:00	OAD	TAL CF
Total	Analysis	SW 7470A		1.00			12J0089	10/02/12 16:41	CJT	TAL CF
Total	Prep	SW 3010A		1.00	50 mL	50 mL	12I1403_P	09/28/12 11:50	JDG	TAL CF
Total	Analysis	SW 6020A		1.00			12I1403	10/03/12 01:57	LBB	TAL CF

Client Sample ID: TC-7

Date Collected: 09/26/12 11:35
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-20

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0003_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0003	09/28/12 12:06	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: TC-23

Date Collected: 09/26/12 09:52
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-21

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0004_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0004	09/28/12 19:13	SJN	TAL CF

Lab Chronicle

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Client Sample ID: TC-23

Date Collected: 09/26/12 09:52
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-21
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: BUS

Date Collected: 09/26/12 09:00
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-22
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0004_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0004	09/28/12 19:37	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: Neiss

Date Collected: 09/26/12 09:05
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-23
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0004_P	09/28/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		1.00			12J0004	09/28/12 20:01	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12J0063_P	10/01/12 16:40	ZTB	TAL CF
Total	Analysis	SW 9041A		1.00			12J0063	10/01/12 16:55	AM	TAL CF

Client Sample ID: Dup

Date Collected: 09/26/12 00:00
Date Received: 09/27/12 09:07

Lab Sample ID: CVI1753-24
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	SW 5030B		1.00	5 mL	5 mL	12J0005_P	09/29/12 00:00	SJN	TAL CF
Total	Analysis	SW 8260B		10.0			12J0005	09/29/12 10:41	SJN	TAL CF
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12I1404_P	09/28/12 11:51	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12I1404	09/28/12 11:55	FMK	TAL CF

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL 800-750-2401



Definitions/Glossary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Laboratory: TestAmerica Cedar Falls

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
AIHA - LAP	IHLAP		101044	11-01-14
Illinois	NELAC	5	200024	11-29-12
Iowa	State Program	7	7	12-01-13
Kansas	NELAC	7	E-10341	01-31-13
Minnesota	NELAC	5	019-999-319	12-31-12
North Dakota	State Program	8	R-186	09-29-13
Oregon	NELAC	10	IA100001	09-29-13
Wisconsin	State Program	5	999917270	08-31-13

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Method Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVI1753

Method	Method Description	Protocol	Laboratory
SW 8260B	Volatile Organic Compounds	TAL CF	
SW 9041A	VOC Preservation Check	TAL CF	
SW 7470A	Total Metals by SW 846 Series Methods	TAL CF	
SW 6020A	Total Metals by SW 846 Series Methods	TAL CF	

Protocol References:

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL 800-750-2401

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone: 319 - 277 - 2401 or 1 - 800 - 750 - 2401
Fax: 319 - 277 - 2425

Company: Geotek Engineering & Testing Services

Send Report To: Keith Delange

Address: 909 East 50th Street

City/State/Zip Code: Sioux Falls, SD 57104

Telephone Number: 605-335-5512 Fax: 605-335-0773

Sampled by: (Print Name) Jeff Thorsheim
(Signature) JEFF Thorsheim

Your PO #: Gestek

Invoice To: Gestek

TA Quote #: Vogels

Project Name: Vogels

Project Number: 91-400

Project Mgr. Email: kdelange@geotekeng.com

Proj. Mgr. Telephone: 605-335-5512

Sample ID	Date Sampled	Time Sampled	# of containers shipped	Grab	Composite	Field Filtered	Preservative						Matrix	Analyze For:							
							Ice	HNO ₃ (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H ₂ SO ₄ Plastic (Yellow & White Label)	H ₂ SO ₄ Glass(Yellow & White Label)	None (Black & White Label)	Other (Specify)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other Specify:	Metallics(As, Cd, Cr, Pb, Hg)
Mw1	9-26-12	11:38	3:00 X			X		X								X	X	X	X		
Mw5		X 9:49	X																		
Gmw3		X 11:24	X																		
Gmw7R		X 9:46	1:50																		
Gmw8		X 11:57	X																		
Gmw9R		X 11:57	1:50																		
Gmw13		X 11:47	X																		
Gmw15		X 10:00	1:50																		
Gmw16		X 10:3	X																		

NOTE: All turn around times are calculated from the time of receipt at TestAmerica

NOTICE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results
with RUSH turn around time commitments; additional charges may be assessed.

NOTE: There may be a charge assessed for TestAmerica disposing of sample remainder

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time
<i>Jeff H</i>	9-26-12	3:00						

Comments:	Shipped Via:
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Received for TestAmerica by	Date	Time	Temperature Upon Receipt	Laboratory Comments
<i>Clyde Van</i>	9/27/12	9:00		

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone: 319 - 277 - 2401 or 1 - 800 - 750 - 2401
Fax: 319 - 277 - 2425

Company: Geotek Engineering & Testing Services
 Send Report To: heith DeLange
 Address: 909 East 50th Street
 City/State/Zip Code: Sioux Falls, SD 57104
 Telephone Number: 605-335-5512 Fax: 605-335-0773
 Sampled by: (Print Name) Jeff Thunheim
 (Signature) JL Thun
 Your PO #: _____
 Invoice To: Guteh
 TA Quote #: _____
 Project Name: Vogels
 Project Number: 91-400
 Project Mgr. Email: h.delange @geotekeng.com
 Proj. Mgr. Telephone: 605-335-5512

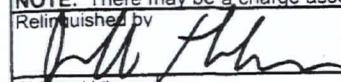
Sample ID	Date Sampled	Time Sampled	# of containers shipped	Grab	Composite	Field Filtered	Preservative	Matrix	Analyze For:	RUSH TAT (Must call ahead)																
							Ice	HNO ₃ (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H ₂ SO ₄ Plastic (Yellow & White Label)	H ₂ SO ₄ Glass (Yellow & White Label)	None (Black & White Label)	Other (Specify)	Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other Specify:		Standard TAT	E-mail results	Fax Results	Send QC with report	
Grw17	9-26-12	4:00	X	X																						
Grw18		X 10:02	X																							
Grw19		X 9:34	X																							
Grw20		X 9:27	X																							
Grw21		X 9:30	X																							
Grw25		X 9:5	X																							
Grw30		X 9:15	X																							
Grw33		X 9:17	X																							
Grw34		X 9:57	X																							

NOTE: All turn around times are calculated from the time of receipt at TestAmerica.

NOTICE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results with RUSH turn around time commitments; additional charges may be assessed.

NOTE: There may be a charge assessed for TestAmerica disposing of sample remainder.

NOTES:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time
	9-26-12	3:00						
Comments:				Shipped Via:				
Shipped Via:								
Received for TestAmerica by	Date	Time	Temperature Upon Receipt	Laboratory Comments				
	9/27/12	9:07						



THE LEADER IN ENVIRONMENTAL TESTING

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone: 319 - 277 - 2401 or 1 - 800 - 750 - 2401
Fax: 319 - 277 - 2425

Company: Geotek Engineering & Testing Services Your PO #: _____
Send Report To: Keith Delange Invoice To: Geotek
Address: 909 East 50th Street TA Quote #: _____
City/State/Zip Code: Sioux Falls, SD 57104 Project Name: Vogel
Telephone Number: 605-335-5512 Fax: 605-335-0773 Project Number: 81-400
Entered by: (Print Name) Jeff Thershaw Project Mgr. Email: kdeltang@geotekeng.com
(Signature) Jeff Thershaw Proj. Mgr. Telephone: 605-335-5512

NOTE: All turn around times are calculated from the time of receipt at TestAmerica
NOTICE: Pre-Arrangements must be made **AT LEAST 48 Hours in ADVANCE** to receive results with RUSH turn around time commitments; additional charges may be assessed.

NOTES

NOTE: There may be a charge assessed for TestAmerica disposing of sample remainder

Relinquished by 11/21/2018 5:21:12 PM

Relinquished by 1178 Date 5-21-11 Time 3:15

Relinquished by 1178 Date 5-21-11 Time 3:15

Comments: Shipped Via:

Shipped via: U.S. Mail Date: 10/10/01 Time: 10:00 AM Temperature Upon Receipt: 72° F. Laboratory Comments:

Received for Testamentary by 9/27/12 9:27

English 101 - 100

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13**Sample Receipt and Temperature Log Form**

Client: GeoTek Eng Project: Vigil
City: Sioux Falls, SD
Date: 9/27/12 Receiver's Initials: C Time (Delivered): 9:17

Temperature Record:

Cooler ID# (If Applicable)

36 °C / On Ice

 Temp Blank Temperature out of compliance**Thermometer:**

- IR - 111531565 'D'
- IR - 111531506 'E'
- IR - 61854108 'Front'
- 101681126

Courier:

<input type="checkbox"/> UPS	<input type="checkbox"/> TA Courier
<input type="checkbox"/> FedEx	<input checked="" type="checkbox"/> TA Field Services
<input type="checkbox"/> FedEx Ground	<input type="checkbox"/> Client
<input type="checkbox"/> US Postal Service	<input type="checkbox"/> Other
<input type="checkbox"/> Spee-Dee	

Custody seals present?

 Yes

Custody seals intact?

 Yes No Non-Conformance report started**Exceptions Noted**

<input type="checkbox"/>	Sample(s) not received in a cooler.
<input type="checkbox"/>	Samples(s) received same day of sampling.
<input type="checkbox"/>	Evidence of a chilling process
<input type="checkbox"/>	No Temp. Blank. Inside temperature of cooler recorded.
<input type="checkbox"/>	Temperature not taken:

*Refer to SOP CF-SS-01 for Temperature Criteria

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Cedar Falls
704 Enterprise Drive

Cedar Falls, IA 50613

Tel: 800-750-2401

TestAmerica Job ID: CVG0553

Client Project/Site: 91-400

Client Project Description: Vogel's

For:

GEOTEK ENGINEERING & TESTING SERVICES
909 E. 50th Street
Sioux Falls, SD 57104

Attn: Keith Delange

Angela Muehling

Authorized for release by:

7/20/2012 10:47:38 AM

Angela Muehling

Project Coordinator

Angela.Muehling@testamericainc.com

Designee for

Derrick Klinkenberg

Organics Manager

derrick.klinkenberg@testamericainc.com

LINKS

Review your project
results through

Total Access

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Sample Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
CVG0553-01	MW-1	Ground Water	07/09/12 15:45	07/11/12 09:25
CVG0553-02	GMW-9R	Ground Water	07/09/12 16:45	07/11/12 09:25
CVG0553-03	GMW-13	Ground Water	07/09/12 16:15	07/11/12 09:25
CVG0553-04	GMW-25	Ground Water	07/09/12 14:25	07/11/12 09:25
CVG0553-05	GMW-30	Ground Water	07/09/12 15:00	07/11/12 09:25
CVG0553-06	MW-5	Ground Water	07/10/12 09:30	07/11/12 09:25
CVG0553-07	GMW-7R	Ground Water	07/10/12 09:00	07/11/12 09:25
CVG0553-08	GMW-21	Ground Water	07/10/12 10:15	07/11/12 09:25



Detection Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

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Client Sample ID: MW-1

Lab Sample ID: CVG0553-01

No Detections

Client Sample ID: GMW-9R

Lab Sample ID: CVG0553-02

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	550		0.58		ug/L	1		RSK-175	Total/NA
Benzene	29.1	J MDL	3.60		ug/L	20.0		OA-1 - 8021B	Total
Toluene	6450		40.0		ug/L	20.0		OA-1 - 8021B	Total
Ethylbenzene - RE1	19700		100		ug/L	50.0		OA-1 - 8021B	Total
Xylenes, total - RE1	70900		150		ug/L	50.0		OA-1 - 8021B	Total

Client Sample ID: GMW-13

Lab Sample ID: CVG0553-03

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	870		0.58		ug/L	1		RSK-175	Total/NA
Toluene	12400		100		ug/L	50.0		OA-1 - 8021B	Total
Ethylbenzene	22500		100		ug/L	50.0		OA-1 - 8021B	Total
Xylenes, total	88500		150		ug/L	50.0		OA-1 - 8021B	Total

Client Sample ID: GMW-25

Lab Sample ID: CVG0553-04

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	1.9		0.58		ug/L	1		RSK-175	Total/NA
Ethylbenzene	9.38		2.00		ug/L	1.00		OA-1 - 8021B	Total
Xylenes, total	12.2		3.00		ug/L	1.00		OA-1 - 8021B	Total

Client Sample ID: GMW-30

Lab Sample ID: CVG0553-05

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	130		0.58		ug/L	1		RSK-175	Total/NA

Client Sample ID: MW-5

Lab Sample ID: CVG0553-06

No Detections

Client Sample ID: GMW-7R

Lab Sample ID: CVG0553-07

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	120		0.58		ug/L	1		RSK-175	Total/NA
Benzene	5.49	J MDL	1.80		ug/L	10.0		OA-1 - 8021B	Total
Ethylbenzene	3090		20.0		ug/L	10.0		OA-1 - 8021B	Total
Xylenes, total	10400		30.0		ug/L	10.0		OA-1 - 8021B	Total

Client Sample ID: GMW-21

Lab Sample ID: CVG0553-08

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	130		0.58		ug/L	1		RSK-175	Total/NA
Benzene	7.64	J MDL	1.80		ug/L	10.0		OA-1 - 8021B	Total
Ethylbenzene	3460		20.0		ug/L	10.0		OA-1 - 8021B	Total
Xylenes, total	10300		30.0		ug/L	10.0		OA-1 - 8021B	Total

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: MW-1

Date Collected: 07/09/12 15:45

Date Received: 07/11/12 09:25

Sampler Name: Scott Schumacher

Lab Sample ID: CVG0553-01

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		07/12/12 20:37	07/12/12 20:41	1.00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.58	U	0.58		ug/L			07/13/12 17:46	1

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 08:07	1.00
Toluene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 08:07	1.00
Ethylbenzene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 08:07	1.00
Xylenes, total	<3.00		3.00		ug/L		07/12/12 00:53	07/12/12 08:07	1.00

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	87		55 - 130	07/12/12 00:53	07/12/12 08:07	1.00

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Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: GMW-9R

Date Collected: 07/09/12 16:45

Date Received: 07/11/12 09:25

Sampler Name: Scott Schumacher

Lab Sample ID: CVG0553-02

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		07/12/12 20:37	07/12/12 20:41	1.00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	550		0.58		ug/L			07/13/12 17:59	1

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	29.1	J MDL	3.60		ug/L		07/12/12 00:53	07/12/12 14:54	20.0
Toluene	6450		40.0		ug/L		07/12/12 00:53	07/12/12 14:54	20.0

Surrogate

Analyte	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	124		55 - 130	07/12/12 00:53	07/12/12 14:54	20.0

Method: OA-1 - 8021B - UST Volatile Compounds by GC - RE1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	19700		100		ug/L		07/17/12 00:38	07/18/12 09:51	50.0
Xylenes, total	70900		150		ug/L		07/17/12 00:38	07/18/12 09:51	50.0

Surrogate

Analyte	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	110		55 - 130	07/17/12 00:38	07/18/12 09:51	50.0

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: GMW-13

Date Collected: 07/09/12 16:15

Date Received: 07/11/12 09:25

Sampler Name: Scott Schumacher

Lab Sample ID: CVG0553-03

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		07/12/12 20:37	07/12/12 20:41	1.00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	870		0.58		ug/L			07/13/12 18:12	1

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<9.00	MDL	9.00		ug/L		07/12/12 00:53	07/12/12 15:31	*50.0
Toluene	12400		100		ug/L		07/12/12 00:53	07/12/12 15:31	50.0
Ethylbenzene	22500		100		ug/L		07/12/12 00:53	07/12/12 15:31	50.0
Xylenes, total	88500		150		ug/L		07/12/12 00:53	07/12/12 15:31	50.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	116		55 - 130				07/12/12 00:53	07/12/12 15:31	50.0

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: GMW-25

Date Collected: 07/09/12 14:25

Date Received: 07/11/12 09:25

Sampler Name: Scott Schumacher

Lab Sample ID: CVG0553-04

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		07/16/12 15:55	07/16/12 15:58	1.00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	1.9		0.58		ug/L			07/13/12 18:24	1

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00		2.00		ug/L		07/13/12 00:29	07/13/12 17:02	1.00
Toluene	<2.00		2.00		ug/L		07/13/12 00:29	07/13/12 17:02	1.00
Ethylbenzene	9.38		2.00		ug/L		07/13/12 00:29	07/13/12 17:02	1.00
Xylenes, total	12.2		3.00		ug/L		07/13/12 00:29	07/13/12 17:02	1.00

Surrogate

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		55 - 130	07/13/12 00:29	07/13/12 17:02	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: GMW-30

Date Collected: 07/09/12 15:00

Date Received: 07/11/12 09:25

Sampler Name: Scott Schumacher

Lab Sample ID: CVG0553-05

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		07/12/12 20:37	07/12/12 20:41	1.00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	130		0.58		ug/L			07/13/12 18:37	1

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 07:31	1.00
Toluene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 07:31	1.00
Ethylbenzene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 07:31	1.00
Xylenes, total	<3.00		3.00		ug/L		07/12/12 00:53	07/12/12 07:31	1.00
Surrogate		%Recovery		Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene		88			55 - 130		07/12/12 00:53	07/12/12 07:31	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: MW-5

Date Collected: 07/10/12 09:30

Date Received: 07/11/12 09:25

Sampler Name: Scott Schumacher

Lab Sample ID: CVG0553-06

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		07/13/12 15:22	07/13/12 15:26	1.00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	<0.58	U	0.58		ug/L			07/13/12 18:50	1

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 08:44	1.00
Toluene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 08:44	1.00
Ethylbenzene	<2.00		2.00		ug/L		07/12/12 00:53	07/12/12 08:44	1.00
Xylenes, total	<3.00		3.00		ug/L		07/12/12 00:53	07/12/12 08:44	1.00
Surrogate							Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	88			55 - 130			07/12/12 00:53	07/12/12 08:44	1.00

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: GMW-7R

Date Collected: 07/10/12 09:00

Date Received: 07/11/12 09:25

Sampler Name: Scott Schumacher

Lab Sample ID: CVG0553-07

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		07/12/12 20:37	07/12/12 20:41	1.00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	120		0.58		ug/L			07/13/12 19:03	1

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.49	J MDL	1.80		ug/L		07/13/12 00:29	07/13/12 21:20	10.0
Toluene	<20.0		20.0		ug/L		07/13/12 00:29	07/13/12 21:20	10.0
Ethylbenzene	3090		20.0		ug/L		07/13/12 00:29	07/13/12 21:20	10.0
Xylenes, total	10400		30.0		ug/L		07/13/12 00:29	07/13/12 21:20	10.0
<i>Surrogate</i>							<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
4-Bromofluorobenzene	108			55 - 130			07/13/12 00:29	07/13/12 21:20	10.0

Client Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: GMW-21

Date Collected: 07/10/12 10:15

Date Received: 07/11/12 09:25

Sampler Name: Scott Schumacher

Lab Sample ID: CVG0553-08

Matrix: Ground Water

Sampler Phone Number: 605-335-5512

Method: SW 9041A - VOC Preservation Check

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH	<2.00		2.00		units		07/12/12 20:37	07/12/12 20:41	1.00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	130		0.58		ug/L			07/13/12 19:16	1

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	7.64	J MDL	1.80		ug/L		07/13/12 00:29	07/13/12 20:43	10.0
Toluene	<20.0		20.0		ug/L		07/13/12 00:29	07/13/12 20:43	10.0
Ethylbenzene	3460		20.0		ug/L		07/13/12 00:29	07/13/12 20:43	10.0
Xylenes, total	10300		30.0		ug/L		07/13/12 00:29	07/13/12 20:43	10.0
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	109		55 - 130				07/13/12 00:29	07/13/12 20:43	10.0

Surrogate Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Matrix: Ground Water

Prep Type: Total

1
2
3
4
5
6
7
8
9
10
11
12
13

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (55-130)
CVG0553-01	MW-1	87
CVG0553-02	GMW-9R	124
CVG0553-02 - RE1	GMW-9R	110
CVG0553-03	GMW-13	116
CVG0553-04	GMW-25	91
CVG0553-05	GMW-30	88
CVG0553-06	MW-5	88
CVG0553-07	GMW-7R	108
CVG0553-08	GMW-21	109

Surrogate Legend

BFB = 4-Bromofluorobenzene

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Matrix: Water - NonPotable

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (55-130)
12G0535-BLK1	Method Blank	87
12G0705-BLK1	Method Blank	87
12G0794-BLK1	Method Blank	86

Surrogate Legend

BFB = 4-Bromofluorobenzene

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Matrix: Water - NonPotable

Prep Type: Total

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (85-125)
12G0535-BS1	Lab Control Sample	100
12G0535-BSD1	Lab Control Sample Dup	105
12G0535-MS1	Matrix Spike	93
12G0535-MSD1	Matrix Spike Duplicate	94
12G0705-BS1	Lab Control Sample	101
12G0705-BSD1	Lab Control Sample Dup	98
12G0705-MS1	Matrix Spike	98
12G0705-MSD1	Matrix Spike Duplicate	100
12G0794-BS1	Lab Control Sample	97
12G0794-BSD1	Lab Control Sample Dup	99
12G0794-MS1	Matrix Spike	130 Z6
12G0794-MSD1	Matrix Spike Duplicate	131 Z6

Surrogate Legend

BFB = 4-Bromofluorobenzene

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-243237/2

Matrix: Water

Analysis Batch: 243237

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane			<0.58	U		0.58	ug/L			07/13/12 10:47	1

Lab Sample ID: LCS 680-243237/3

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	RPD
	Added									
Methane	153			181		ug/L		118	75 - 125	

Lab Sample ID: LCSD 680-243237/4

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike	LCSD	LCSD	Result	Qualifier	Unit	D	%Rec	Limits	RPD
	Added									
Methane	153			176		ug/L		115	75 - 125	3

Method: OA-1 - 8021B - UST Volatile Compounds by GC

Lab Sample ID: 12G0535-BLK1

Client Sample ID: Method Blank

Matrix: Water - NonPotable

Analysis Batch: 12G0535

Prep Type: Total

Prep Batch: 12G0535_P

Analyte	Blank	Blank	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene			<2.00		2.00		ug/L		07/11/12 00:53	07/12/12 00:44	1.00
Toluene			<2.00		2.00		ug/L		07/11/12 00:53	07/12/12 00:44	1.00
Ethylbenzene			<2.00		2.00		ug/L		07/11/12 00:53	07/12/12 00:44	1.00
Xylenes, total			<3.00		3.00		ug/L		07/11/12 00:53	07/12/12 00:44	1.00
Surrogate	Blank	Blank	%Recovery	Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene			87		55 - 130				07/11/12 00:53	07/12/12 00:44	1.00

Lab Sample ID: 12G0535-BS1

Client Sample ID: Lab Control Sample

Matrix: Water - NonPotable

Analysis Batch: 12G0535

Prep Type: Total

Prep Batch: 12G0535_P

Analyte	Spike	LCS	LCS	Result	Qualifier	Unit	D	%Rec	Limits	RPD
	Added									
Benzene			100	93.6		ug/L		94	45 - 120	
Toluene			100	94.7		ug/L		95	65 - 115	
Ethylbenzene			100	94.2		ug/L		94	65 - 130	
Xylenes, total			300	286		ug/L		95	65 - 130	
Surrogate	LCS	LCS	%Recovery	Qualifier	Limits		D	%Rec.	Limits	RPD
4-Bromofluorobenzene			100		85 - 125					

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Method: OA-1 - 8021B - UST Volatile Compounds by GC (Continued)

Lab Sample ID: 12G0535-BSD1										Client Sample ID: Lab Control Sample Dup				
Matrix: Water - NonPotable										Prep Type: Total				
Analysis Batch: 12G0535										Prep Batch: 12G0535_P				
Analyte			Spike	LCS Dup	LCS Dup			D	%Rec	%Rec.	RPD			
			Added	Result	Qualifier	Unit				Limits	RPD			
Benzene			100	94.2		ug/L		94	45 - 120	0.7	20			
Toluene			100	95.7		ug/L		96	65 - 115	1	20			
Ethylbenzene			100	96.6		ug/L		97	65 - 130	3	20			
Xylenes, total			300	291		ug/L		97	65 - 130	2	20			
Surrogate			LCS Dup	LCS Dup										
			%Recovery	Qualifier		Limits								
4-Bromofluorobenzene			105			85 - 125								
Lab Sample ID: 12G0535-MS1										Client Sample ID: Matrix Spike				
Matrix: Water - NonPotable										Prep Type: Total				
Analysis Batch: 12G0535										Prep Batch: 12G0535_P				
Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike			D	%Rec	%Rec.	RPD			
	Result	Qualifier	Added	Result	Qualifier	Unit				Limits				
Benzene	0.407		100	82.0		ug/L		82	40 - 120					
Toluene	0.720		100	83.3		ug/L		83	65 - 120					
Ethylbenzene	0.587		100	81.8		ug/L		81	65 - 125					
Xylenes, total	5.12		300	252		ug/L		82	65 - 130					
Surrogate			Matrix Spike	Matrix Spike										
			%Recovery	Qualifier		Limits								
4-Bromofluorobenzene			93			85 - 125								
Lab Sample ID: 12G0535-MSD1										Client Sample ID: Matrix Spike Duplicate				
Matrix: Water - NonPotable										Prep Type: Total				
Analysis Batch: 12G0535										Prep Batch: 12G0535_P				
Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	Dup	Matrix Spike	Dup		%Rec.	RPD			
	Result	Qualifier	Added	Result	Qualifier		Result	Dup	D	%Rec	Limits	RPD		
Benzene	0.407		100	81.7			ug/L		81	40 - 120	0.4	15		
Toluene	0.720		100	82.7			ug/L		82	65 - 120	0.7	10		
Ethylbenzene	0.587		100	81.2			ug/L		81	65 - 125	0.8	10		
Xylenes, total	5.12		300	249			ug/L		81	65 - 130	0.9	10		
Surrogate			Matrix Spike	Dup	Matrix Spike	Dup								
			%Recovery	Qualifier		Limits								
4-Bromofluorobenzene			94			85 - 125								
Lab Sample ID: 12G0705-BLK1										Client Sample ID: Method Blank				
Matrix: Water - NonPotable										Prep Type: Total				
Analysis Batch: 12G0705										Prep Batch: 12G0705_P				
Analyte	Blank	Blank				RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac		
	Result	Qualifier												
Benzene	<2.00			2.00			ug/L		07/13/12 00:29	07/13/12 10:18		1.00		
Toluene	<2.00			2.00			ug/L		07/13/12 00:29	07/13/12 10:18		1.00		
Ethylbenzene	<2.00			2.00			ug/L		07/13/12 00:29	07/13/12 10:18		1.00		
Xylenes, total	<3.00			3.00			ug/L		07/13/12 00:29	07/13/12 10:18		1.00		
Surrogate			Blank	Blank										
			%Recovery	Qualifier		Limits								
4-Bromofluorobenzene			87			55 - 130								

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Method: OA-1 - 8021B - UST Volatile Compounds by GC (Continued)

Lab Sample ID: 12G0705-BS1

Matrix: Water - NonPotable

Analysis Batch: 12G0705

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12G0705_P

Analyte	Spike	LCS	LCS	D	%Rec	Limits	
	Added	Result	Qualifier				
Benzene	100	99.7		ug/L	100	45 - 120	
Toluene	100	99.6		ug/L	100	65 - 115	
Ethylbenzene	100	96.7		ug/L	97	65 - 130	
Xylenes, total	300	288		ug/L	96	65 - 130	
Surrogate		LCS	LCS				
4-Bromofluorobenzene		%Recovery	Qualifier	Limits			
		101		85 - 125			

Lab Sample ID: 12G0705-BSD1

Matrix: Water - NonPotable

Analysis Batch: 12G0705

Client Sample ID: Lab Control Sample Dup

Prep Type: Total

Prep Batch: 12G0705_P

Analyte	Spike	LCS Dup	LCS Dup	D	%Rec	Limits	RPD	Limit
	Added	Result	Qualifier					
Benzene	100	97.1		ug/L	97	45 - 120	3	20
Toluene	100	96.6		ug/L	97	65 - 115	3	20
Ethylbenzene	100	93.9		ug/L	94	65 - 130	3	20
Xylenes, total	300	278		ug/L	93	65 - 130	4	20
Surrogate		LCS Dup	LCS Dup					
4-Bromofluorobenzene		%Recovery	Qualifier	Limits				
		98		85 - 125				

Lab Sample ID: 12G0705-MS1

Matrix: Water - NonPotable

Analysis Batch: 12G0705

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12G0705_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier			
Benzene	0.0920		100	88.8		ug/L	89	40 - 120
Toluene	0.143		100	88.2		ug/L	88	65 - 120
Ethylbenzene	0.245		100	84.5		ug/L	84	65 - 125
Xylenes, total	0.974		300	252		ug/L	84	65 - 130
Surrogate		Matrix Spike	Matrix Spike					
4-Bromofluorobenzene		%Recovery	Qualifier	Limits				
		98		85 - 125				

Lab Sample ID: 12G0705-MSD1

Matrix: Water - NonPotable

Analysis Batch: 12G0705

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total

Prep Batch: 12G0705_P

Analyte	Sample	Sample	Spike	Matrix Spike Dup	Matrix Spike Dup	D	%Rec	Limits	RPD
	Result	Qualifier	Added	Result	Qualifier				
Benzene	0.0920		100	87.3		ug/L	87	40 - 120	2
Toluene	0.143		100	88.0		ug/L	88	65 - 120	0.3
Ethylbenzene	0.245		100	83.4		ug/L	83	65 - 125	1
Xylenes, total	0.974		300	251		ug/L	83	65 - 130	0.4
Surrogate		Matrix Spike Dup	Matrix Spike Dup						
4-Bromofluorobenzene		%Recovery	Qualifier	Limits					
		100		85 - 125					

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Method: OA-1 - 8021B - UST Volatile Compounds by GC (Continued)

Lab Sample ID: 12G0794-BLK1

Matrix: Water - NonPotable

Analysis Batch: 12G0794

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 12G0794_P

Analyte	Blank	Blank	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<2.00		2.00		ug/L		07/17/12 00:38	07/17/12 03:57	1.00
Toluene	<2.00		2.00		ug/L		07/17/12 00:38	07/17/12 03:57	1.00
Ethylbenzene	<2.00		2.00		ug/L		07/17/12 00:38	07/17/12 03:57	1.00
Xylenes, total	<3.00		3.00		ug/L		07/17/12 00:38	07/17/12 03:57	1.00
<hr/>									
Surrogate	Blank	Blank	%Recovery	Qualifier	Limits	D	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
4-Bromofluorobenzene	86		55 - 130				07/17/12 00:38	07/17/12 03:57	1.00

Lab Sample ID: 12G0794-BS1

Matrix: Water - NonPotable

Analysis Batch: 12G0794

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 12G0794_P

Analyte	Spike	LCS	LCS	D	%Rec	Limits	%Rec.
	Added	Result	Qualifier				
Benzene	100	93.0		ug/L	93	45 - 120	
Toluene	100	93.6		ug/L	94	65 - 115	
Ethylbenzene	100	90.9		ug/L	91	65 - 130	
Xylenes, total	300	269		ug/L	90	65 - 130	
<hr/>							
Surrogate	LCS	LCS	%Recovery	Qualifier	Limits	%Rec.	RPD
	%Recovery	Qualifier					
4-Bromofluorobenzene	97		85 - 125				

Lab Sample ID: 12G0794-BSD1

Matrix: Water - NonPotable

Analysis Batch: 12G0794

Client Sample ID: Lab Control Sample Dup

Prep Type: Total

Prep Batch: 12G0794_P

Analyte	Spike	LCS Dup	LCS Dup	D	%Rec	Limits	RPD	Limit
	Added	Result	Qualifier					
Benzene	100	95.6		ug/L	96	45 - 120	3	20
Toluene	100	101		ug/L	101	65 - 115	7	20
Ethylbenzene	100	96.4		ug/L	96	65 - 130	6	20
Xylenes, total	300	284		ug/L	95	65 - 130	5	20
<hr/>								
Surrogate	LCS Dup	LCS Dup	%Recovery	Qualifier	Limits	%Rec.	RPD	Limit
	%Recovery	Qualifier						
4-Bromofluorobenzene	99		85 - 125					

Lab Sample ID: 12G0794-MS1

Matrix: Water - NonPotable

Analysis Batch: 12G0794

Client Sample ID: Matrix Spike

Prep Type: Total

Prep Batch: 12G0794_P

Analyte	Sample	Sample	Spike	Matrix Spike	Matrix Spike	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier			
Benzene	1.67		100	83.6		ug/L	82	40 - 120
Toluene	8.86		100	92.7		ug/L	84	65 - 120
Ethylbenzene	20.4		100	95.7		ug/L	75	65 - 125
Xylenes, total	15.0		300	245		ug/L	77	65 - 130
<hr/>								
Surrogate	Matrix Spike	Matrix Spike	%Recovery	Qualifier	Limits	%Rec.	RPD	Limit
	%Recovery	Qualifier						
4-Bromofluorobenzene	130	Z6	85 - 125					

QC Sample Results

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVG0553

Method: OA-1 - 8021B - UST Volatile Compounds by GC (Continued)

Lab Sample ID: 12G0794-MSD1										Client Sample ID: Matrix Spike Duplicate			
Matrix: Water - NonPotable										Prep Type: Total			
Analysis Batch: 12G0794										Prep Batch: 12G0794_P			
Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Result	Spike Qualifier	Dup Unit	D	%Rec	Limits	RPD	Limit		
Benzene	1.67		100	82.4		ug/L	81	40 - 120		1	15		
Toluene	8.86		100	91.6		ug/L	83	65 - 120		1	10		
Ethylbenzene	20.4		100	93.3		ug/L	73	65 - 125		3	10		
Xylenes, total	15.0		300	241		ug/L	75	65 - 130		1	10		
<i>Surrogate</i>		<i>Matrix Spike Dup</i>		<i>Matrix Spike Dup</i>		<i>Matrix Spike Dup</i>		<i>Matrix Spike Dup</i>		<i>Matrix Spike Dup</i>		<i>Matrix Spike Dup</i>	
<i>4-Bromofluorobenzene</i>		%Recovery		Qualifier		Limits		Limits		Limits		Limits	
		131		Z6		85 - 125							

QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

GCMS Volatiles

Analysis Batch: 12G0599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-01	MW-1	Total	Ground Water	SW 9041A	12G0599_P
CVG0553-02	GMW-9R	Total	Ground Water	SW 9041A	12G0599_P
CVG0553-03	GMW-13	Total	Ground Water	SW 9041A	12G0599_P
CVG0553-05	GMW-30	Total	Ground Water	SW 9041A	12G0599_P
CVG0553-07	GMW-7R	Total	Ground Water	SW 9041A	12G0599_P
CVG0553-08	GMW-21	Total	Ground Water	SW 9041A	12G0599_P

Analysis Batch: 12G0655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-06	MW-5	Total	Ground Water	SW 9041A	12G0655_P

Analysis Batch: 12G0736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-04	GMW-25	Total	Ground Water	SW 9041A	12G0736_P

Prep Batch: 12G0599_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-01	MW-1	Total	Ground Water	Default Prep VOC	
CVG0553-02	GMW-9R	Total	Ground Water	Default Prep VOC	
CVG0553-03	GMW-13	Total	Ground Water	Default Prep VOC	
CVG0553-05	GMW-30	Total	Ground Water	Default Prep VOC	
CVG0553-07	GMW-7R	Total	Ground Water	Default Prep VOC	
CVG0553-08	GMW-21	Total	Ground Water	Default Prep VOC	

Prep Batch: 12G0655_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-06	MW-5	Total	Ground Water	Default Prep VOC	

Prep Batch: 12G0736_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-04	GMW-25	Total	Ground Water	Default Prep VOC	

GC VOA

Analysis Batch: 243224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-02	GMW-9R	Total/NA	Ground Water	RSK-175	
CVG0553-03	GMW-13	Total/NA	Ground Water	RSK-175	

Analysis Batch: 243237

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-01	MW-1	Total/NA	Ground Water	RSK-175	
CVG0553-04	GMW-25	Total/NA	Ground Water	RSK-175	
CVG0553-05	GMW-30	Total/NA	Ground Water	RSK-175	
CVG0553-06	MW-5	Total/NA	Ground Water	RSK-175	
CVG0553-07	GMW-7R	Total/NA	Ground Water	RSK-175	

QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

GC VOA (Continued)

Analysis Batch: 243237 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
CVG0553-08	GMW-21	Total/NA	Ground Water	RSK-175	
LCS 680-243237/3	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-243237/4	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-243237/2	Method Blank	Total/NA	Water	RSK-175	

GC Volatiles

Analysis Batch: 12G0535

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12G0535-BLK1	Method Blank	Total	Water - NonPotable	OA-1 - 8021B	12G0535_P
12G0535-BS1	Lab Control Sample	Total	Water - NonPotable	OA-1 - 8021B	12G0535_P
12G0535-BSD1	Lab Control Sample Dup	Total	Water - NonPotable	OA-1 - 8021B	12G0535_P
12G0535-MS1	Matrix Spike	Total	Water - NonPotable	OA-1 - 8021B	12G0535_P
12G0535-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	OA-1 - 8021B	12G0535_P
CVG0553-01	MW-1	Total	Ground Water	OA-1 - 8021B	12G0535_P
CVG0553-02	GMW-9R	Total	Ground Water	OA-1 - 8021B	12G0535_P
CVG0553-03	GMW-13	Total	Ground Water	OA-1 - 8021B	12G0535_P
CVG0553-05	GMW-30	Total	Ground Water	OA-1 - 8021B	12G0535_P
CVG0553-06	MW-5	Total	Ground Water	OA-1 - 8021B	12G0535_P

Analysis Batch: 12G0705

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12G0705-BLK1	Method Blank	Total	Water - NonPotable	OA-1 - 8021B	12G0705_P
12G0705-BS1	Lab Control Sample	Total	Water - NonPotable	OA-1 - 8021B	12G0705_P
12G0705-BSD1	Lab Control Sample Dup	Total	Water - NonPotable	OA-1 - 8021B	12G0705_P
12G0705-MS1	Matrix Spike	Total	Water - NonPotable	OA-1 - 8021B	12G0705_P
12G0705-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	OA-1 - 8021B	12G0705_P
CVG0553-04	GMW-25	Total	Ground Water	OA-1 - 8021B	12G0705_P
CVG0553-07	GMW-7R	Total	Ground Water	OA-1 - 8021B	12G0705_P
CVG0553-08	GMW-21	Total	Ground Water	OA-1 - 8021B	12G0705_P

Analysis Batch: 12G0794

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12G0794-BLK1	Method Blank	Total	Water - NonPotable	OA-1 - 8021B	12G0794_P
12G0794-BS1	Lab Control Sample	Total	Water - NonPotable	OA-1 - 8021B	12G0794_P
12G0794-BSD1	Lab Control Sample Dup	Total	Water - NonPotable	OA-1 - 8021B	12G0794_P
12G0794-MS1	Matrix Spike	Total	Water - NonPotable	OA-1 - 8021B	12G0794_P
12G0794-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	OA-1 - 8021B	12G0794_P
CVG0553-02 - RE1	GMW-9R	Total	Ground Water	OA-1 - 8021B	12G0794_P

QC Association Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

GC Volatiles (Continued)

Prep Batch: 12G0535_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12G0535-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B GC	
12G0535-BS1	Lab Control Sample	Total	Water - NonPotable	SW 5030B GC	
12G0535-BSD1	Lab Control Sample Dup	Total	Water - NonPotable	SW 5030B GC	
12G0535-MS1	Matrix Spike	Total	Water - NonPotable	SW 5030B GC	
12G0535-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 5030B GC	
CVG0553-01	MW-1	Total	Ground Water	SW 5030B GC	
CVG0553-02	GMW-9R	Total	Ground Water	SW 5030B GC	
CVG0553-03	GMW-13	Total	Ground Water	SW 5030B GC	
CVG0553-05	GMW-30	Total	Ground Water	SW 5030B GC	
CVG0553-06	MW-5	Total	Ground Water	SW 5030B GC	

Prep Batch: 12G0705_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12G0705-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B GC	
12G0705-BS1	Lab Control Sample	Total	Water - NonPotable	SW 5030B GC	
12G0705-BSD1	Lab Control Sample Dup	Total	Water - NonPotable	SW 5030B GC	
12G0705-MS1	Matrix Spike	Total	Water - NonPotable	SW 5030B GC	
12G0705-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 5030B GC	
CVG0553-04	GMW-25	Total	Ground Water	SW 5030B GC	
CVG0553-07	GMW-7R	Total	Ground Water	SW 5030B GC	
CVG0553-08	GMW-21	Total	Ground Water	SW 5030B GC	

Prep Batch: 12G0794_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
12G0794-BLK1	Method Blank	Total	Water - NonPotable	SW 5030B GC	
12G0794-BS1	Lab Control Sample	Total	Water - NonPotable	SW 5030B GC	
12G0794-BSD1	Lab Control Sample Dup	Total	Water - NonPotable	SW 5030B GC	
12G0794-MS1	Matrix Spike	Total	Water - NonPotable	SW 5030B GC	
12G0794-MSD1	Matrix Spike Duplicate	Total	Water - NonPotable	SW 5030B GC	
CVG0553-02 - RE1	GMW-9R	Total	Ground Water	SW 5030B GC	

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Lab Chronicle

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: MW-1

Date Collected: 07/09/12 15:45
Date Received: 07/11/12 09:25

Lab Sample ID: CVG0553-01

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12G0599_P	07/12/12 20:37	CMM	TAL CF
Total	Analysis	SW 9041A		1.00			12G0599	07/12/12 20:41	CMM	TAL CF
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	243237	07/13/12 17:46	AJMC	TAL SAV
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	12G0535_P	07/12/12 00:53	CMM	TAL CF
Total	Analysis	OA-1 - 8021B		1.00			12G0535	07/12/12 08:07	CMM	TAL CF

Client Sample ID: GMW-9R

Date Collected: 07/09/12 16:45
Date Received: 07/11/12 09:25

Lab Sample ID: CVG0553-02

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12G0599_P	07/12/12 20:37	CMM	TAL CF
Total	Analysis	SW 9041A		1.00			12G0599	07/12/12 20:41	CMM	TAL CF
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	243224	07/13/12 17:59	AJMC	TAL SAV
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	12G0535_P	07/12/12 00:53	CMM	TAL CF
Total	Analysis	OA-1 - 8021B		20.0			12G0535	07/12/12 14:54	CMM	TAL CF
Total	Prep	SW 5030B GC	RE1	1.00	5 mL	5 mL	12G0794_P	07/17/12 00:38	CMM	TAL CF
Total	Analysis	OA-1 - 8021B	RE1	50.0			12G0794	07/18/12 09:51	CMM	TAL CF

Client Sample ID: GMW-13

Date Collected: 07/09/12 16:15
Date Received: 07/11/12 09:25

Lab Sample ID: CVG0553-03

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12G0599_P	07/12/12 20:37	CMM	TAL CF
Total	Analysis	SW 9041A		1.00			12G0599	07/12/12 20:41	CMM	TAL CF
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	243224	07/13/12 18:12	AJMC	TAL SAV
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	12G0535_P	07/12/12 00:53	CMM	TAL CF
Total	Analysis	OA-1 - 8021B		50.0			12G0535	07/12/12 15:31	CMM	TAL CF

Client Sample ID: GMW-25

Date Collected: 07/09/12 14:25
Date Received: 07/11/12 09:25

Lab Sample ID: CVG0553-04

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12G0736_P	07/16/12 15:55	FMK	TAL CF
Total	Analysis	SW 9041A		1.00			12G0736	07/16/12 15:58	FMK	TAL CF
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	243237	07/13/12 18:24	AJMC	TAL SAV
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	12G0705_P	07/13/12 00:29	CMM	TAL CF
Total	Analysis	OA-1 - 8021B		1.00			12G0705	07/13/12 17:02	CMM	TAL CF

Lab Chronicle

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Client Sample ID: GMW-30

Date Collected: 07/09/12 15:00

Date Received: 07/11/12 09:25

Lab Sample ID: CVG0553-05

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12G0599_P	07/12/12 20:37	CMM	TAL CF
Total	Analysis	SW 9041A		1.00			12G0599	07/12/12 20:41	CMM	TAL CF
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	243237	07/13/12 18:37	AJMC	TAL SAV
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	12G0535_P	07/12/12 00:53	CMM	TAL CF
Total	Analysis	OA-1 - 8021B		1.00			12G0535	07/12/12 07:31	CMM	TAL CF

Client Sample ID: MW-5

Date Collected: 07/10/12 09:30

Date Received: 07/11/12 09:25

Lab Sample ID: CVG0553-06

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12G0655_P	07/13/12 15:22	CMM	TAL CF
Total	Analysis	SW 9041A		1.00			12G0655	07/13/12 15:26	CMM	TAL CF
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	243237	07/13/12 18:50	AJMC	TAL SAV
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	12G0535_P	07/12/12 00:53	CMM	TAL CF
Total	Analysis	OA-1 - 8021B		1.00			12G0535	07/12/12 08:44	CMM	TAL CF

Client Sample ID: GMW-7R

Date Collected: 07/10/12 09:00

Date Received: 07/11/12 09:25

Lab Sample ID: CVG0553-07

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12G0599_P	07/12/12 20:37	CMM	TAL CF
Total	Analysis	SW 9041A		1.00			12G0599	07/12/12 20:41	CMM	TAL CF
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	243237	07/13/12 19:03	AJMC	TAL SAV
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	12G0705_P	07/13/12 00:29	CMM	TAL CF
Total	Analysis	OA-1 - 8021B		10.0			12G0705	07/13/12 21:20	CMM	TAL CF

Client Sample ID: GMW-21

Date Collected: 07/10/12 10:15

Date Received: 07/11/12 09:25

Lab Sample ID: CVG0553-08

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	Default Prep VOC		1.00	5 mL	5 mL	12G0599_P	07/12/12 20:37	CMM	TAL CF
Total	Analysis	SW 9041A		1.00			12G0599	07/12/12 20:41	CMM	TAL CF
Total/NA	Analysis	RSK-175		1	17000 uL	17 mL	243237	07/13/12 19:16	AJMC	TAL SAV
Total	Prep	SW 5030B GC		1.00	5 mL	5 mL	12G0705_P	07/13/12 00:29	CMM	TAL CF
Total	Analysis	OA-1 - 8021B		10.0			12G0705	07/13/12 20:43	CMM	TAL CF

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL 800-750-2401

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Definitions/Glossary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Qualifiers

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Volatiles

Qualifier	Qualifier Description
Z6	Surrogate recovery was outside control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
MDL	Results calculated/entered to the method detection limit (MDL).

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
♂	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
 Project/Site: 91-400

TestAmerica Job ID: CVG0553

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Cedar Falls	AIHA - LAP	IHLAP		101044
TestAmerica Cedar Falls	Illinois	NELAC	5	200024
TestAmerica Cedar Falls	Iowa	State Program	7	7
TestAmerica Cedar Falls	Kansas	NELAC	7	E-10341
TestAmerica Cedar Falls	Minnesota	NELAC	5	019-999-319
TestAmerica Cedar Falls	North Dakota	State Program	8	R-186
TestAmerica Cedar Falls	Oregon	NELAC	10	IA100001
TestAmerica Cedar Falls	Wisconsin	State Program	5	999917270
TestAmerica Savannah	A2LA	DoD ELAP		0399-01
TestAmerica Savannah	A2LA	ISO/IEC 17025		399.01
TestAmerica Savannah	Alabama	State Program	4	41450
TestAmerica Savannah	Alaska (UST)	State Program	10	UST-104
TestAmerica Savannah	Arkansas DEQ	State Program	6	88-0692
TestAmerica Savannah	California	NELAC	9	3217CA
TestAmerica Savannah	Colorado	State Program	8	N/A
TestAmerica Savannah	Connecticut	State Program	1	PH-0161
TestAmerica Savannah	Florida	NELAC	4	E87052
TestAmerica Savannah	GA Dept. of Agriculture	State Program	4	N/A
TestAmerica Savannah	Georgia	State Program	4	803
TestAmerica Savannah	Georgia	State Program	4	N/A
TestAmerica Savannah	Guam	State Program	9	09-005r
TestAmerica Savannah	Hawaii	State Program	9	N/A
TestAmerica Savannah	Illinois	NELAC	5	200022
TestAmerica Savannah	Indiana	State Program	5	N/A
TestAmerica Savannah	Iowa	State Program	7	353
TestAmerica Savannah	Kentucky	State Program	4	90084
TestAmerica Savannah	Kentucky (UST)	State Program	4	18
TestAmerica Savannah	Louisiana	NELAC	6	30690
TestAmerica Savannah	Louisiana	NELAC	6	LA100015
TestAmerica Savannah	Maine	State Program	1	GA00006
TestAmerica Savannah	Maryland	State Program	3	250
TestAmerica Savannah	Massachusetts	State Program	1	M-GA006
TestAmerica Savannah	Michigan	State Program	5	9925
TestAmerica Savannah	Mississippi	State Program	4	N/A
TestAmerica Savannah	Montana	State Program	8	CERT0081
TestAmerica Savannah	Nebraska	State Program	7	TestAmerica-Savannah
TestAmerica Savannah	New Jersey	NELAC	2	GA769
TestAmerica Savannah	New Mexico	State Program	6	N/A
TestAmerica Savannah	New York	NELAC	2	10842
TestAmerica Savannah	North Carolina DENR	State Program	4	269
TestAmerica Savannah	North Carolina DHHS	State Program	4	13701
TestAmerica Savannah	Oklahoma	State Program	6	9984
TestAmerica Savannah	Pennsylvania	NELAC	3	68-00474
TestAmerica Savannah	Puerto Rico	State Program	2	GA00006
TestAmerica Savannah	Rhode Island	State Program	1	LAO00244
TestAmerica Savannah	South Carolina	State Program	4	98001
TestAmerica Savannah	Tennessee	State Program	4	TN02961
TestAmerica Savannah	Texas	NELAC	6	T104704185-08-TX
TestAmerica Savannah	USDA	Federal		SAV 3-04
TestAmerica Savannah	Vermont	State Program	1	87052
TestAmerica Savannah	Virginia	NELAC	3	460161
TestAmerica Savannah	Washington	State Program	10	C1794
TestAmerica Savannah	West Virginia	State Program	3	9950C

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Certification Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Savannah	West Virginia DEP	State Program	3	94
TestAmerica Savannah	Wisconsin	State Program	5	999819810
TestAmerica Savannah	Wyoming	State Program	8	8TMS-Q

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.



Method Summary

Client: GEOTEK ENGINEERING & TESTING SERVICES
Project/Site: 91-400

TestAmerica Job ID: CVG0553

Method	Method Description	Protocol	Laboratory
SW 9041A	VOC Preservation Check		TAL CF
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
OA-1 - 8021B	UST Volatile Compounds by GC		TAL CF

Protocol References:

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175,
Rev. 0, 8/11/94, USEPA Research Lab

Laboratory References:

TAL CF = TestAmerica Cedar Falls, 704 Enterprise Drive, Cedar Falls, IA 50613, TEL 800-750-2401

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Cedar Falls Division
704 Enterprise Drive
Cedar Falls, IA 50613

Phone: 319 - 277 - 2401 or 1 - 800 - 750 - 2401
Fax: 319 - 277 - 2425

Company: Geotek Engineering & Testing Services Your PO #: _____
 Send Report To: KEITH DELANGE Invoice To: GEOTEK
 Address: 909 East 50th Street TA Quote #: _____
 City/State/Zip Code: Sioux Falls, SD 57104 Project Name: VOGEL'S
 Telephone Number: 605-335-5512 Fax: 605-335-0773 Project Number: 91-400
 Sampled by: (Print Name) Sean C SCHUMACHER Project Mgr. Email: kdelange @geotekeng.com
 (Signature) J.C.A. Proj. Mgr. Telephone: 605-335-5512

Sample ID	Date Sampled	Time Sampled	# of containers shipped	Grab	Composite	Field Filtered	Preservative			Matrix			Analyze For:			RUSH TAT (Must call ahead!)	
							Ice	HNO ₃ (Red & White Label)	HCl (Blue & White Label)	NaOH (Orange & White Label)	H ₂ SO ₄ Plastic (Yellow & White Label)	H ₂ SO ₄ Glass (Yellow & White Label)	None (Black & White Label)	Other (Specify)	Groundwater	Wastewater	Drinking Water
MW-1	7/9/12	3:45	3/0A	X		X		X									
GMW-9R	7/9/12	4:45	3/0A	X		X	X			X							
GMW-13	7/9/12	4:15	3/0A	X		X	X			X							
GMW-25	7/9/12	2:25	3/0A	X		X	X			X							
GMW-30	7/9/12	3:00	3/0A	X		X	X			X							
MW-5	7/10/12	9:30	3/0A	X		X	X			X							
GMW-7R	7/10/12	9:00	3/0A	X		X	X			X							
GMW-21	7/10/12	10:15	3/0A	X		X	X			X							

NOTE: All turn around times are calculated from the time of receipt at TestAmerica.

NOTICE: Pre-Arrangements must be made AT LEAST 48 Hours in ADVANCE to receive results with RUSH turn around time commitments; additional charges may be assessed.

NOTE: There may be a charge assessed for TestAmerica disposing of sample remainder

NOTES:

Relinquished by	Date	Time	Received by	Date	Time	Relinquished by	Date	Time
<u>J.C.A.</u>	7/10/12	4:00						
Comments:						Shipped Via:		
Received for TestAmerica by	Date	Time	Temperature Upon Receipt	Laboratory Comments				
<u>Chewerson</u>	7/11/12	9:30						

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

704 ENTERPRISE DRIVE • CEDAR FALLS, IA 50613
800-750-2401 • 319-277-2425 FAX

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Sample Receipt and Temperature Log Form

Client: CecTek

Project: Vogels

City: SF, SD

Date: 7/11/12 Receiver's Initials: an Time (Delivered): 9:25

Temperature Record:

Cooler ID# (If Applicable)

4,2 °C / On Ice

Temp Blank

Temperature out of compliance

Thermometer:

- IR - 111531565 'D'
- IR - 111531506 'E'
- IR - 61854108 'Front'
- 101681126

Courier:

- UPS
- FedEx
- FedEx Ground
- US Postal Service
- Spee-Dee
- TA Courier
- TA Field Services
- Client
- Other

Custody seals present?

Yes

Custody seals intact?

Yes No

Non-Conformance report started

IPV Broken G.W.I.

Exceptions Noted

- Sample(s) not received in a cooler.
- Samples(s) received same day of sampling.
- Evidence of a chilling process
- No Temp. Blank. Inside temperature of cooler recorded.
- Temperature not taken:

*Refer to SOP CF-SS-01 for Temperature Criteria

APPENDIX B



June 2011 – Vogel's site



September 2012 – Vogel's site





Imagery Date: 7/8/2008

530 ft

Grant Ave

© 2013 Google
Image USDA Farm Service Agency

lat: 42.933283° lon: -96.192399° elev: 1309 ft

Eye alt: 3622 ft

Google earth



Imagery Date: 6/19/2009

530 ft

Grant Ave

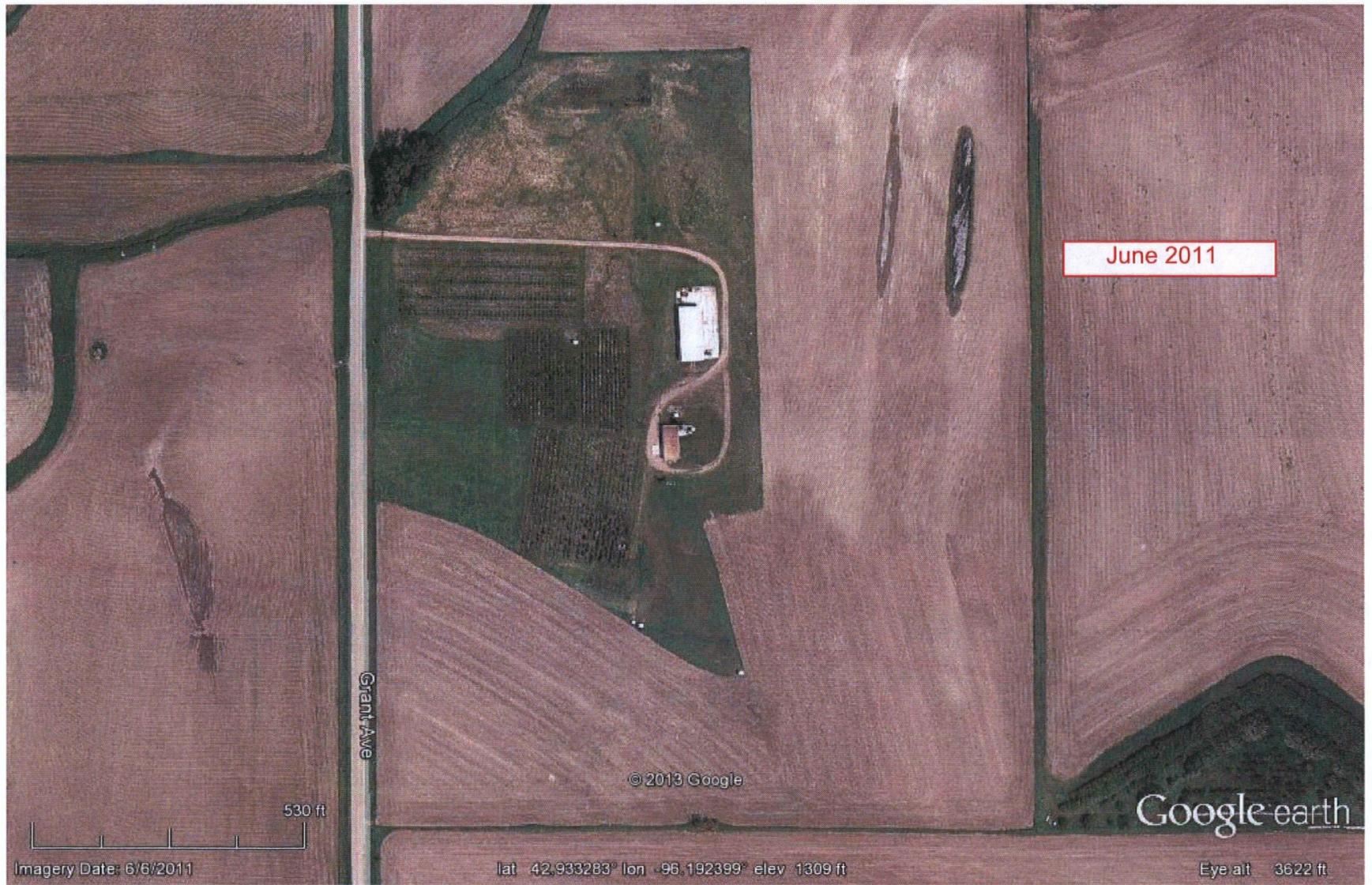
© 2013 Google
Image USDA Farm Service Agency

lat 42.933283° lon -96.192399° elev 1309 ft

Google earth

Eye alt 3622 ft





APPENDIX C

TIER 2 DATA BEFORE MODELING

Free Product Present?	Groundwater encountered?	SCR conversion?
TEH-diesel required?	TEH-waste oil required?	Bedrock:

Analytical Data							
Groundwater Maximums				Soil Maximums			
	Date	B/MW #	Concentration (ug/L)		Date	B/MW #	Concentration (mg/kg)
B	12/11/2002	GMW9R	84.	B	NSC	NSC	NSC
T	12/11/2002	GMW9R	32,200.	T	NSC	NSC	NSC
E	09/27/2004	GMW13	37,800.	E	NSC	NSC	NSC
X	08/28/1997	GWM10R	371,000.	X	NSC	NSC	NSC
TEH d	NSC	NSC	NSC	TEH d	NSC	NSC	NSC
TEH wo	NSC	NSC	NSC	TEH wo	NSC	NSC	NSC

Soil Gas	Benzene		Toluene		Ethylbenzene		TEH d	
	Sampled Soil Gas	Result						
Soil Source								
Groundwater Source								

Initial Receptor Evaluation			
Ingestion-Actual	Water supply well survey within 1,000 ft?		
	Drinking water wells within 1,000 ft?		
	Non-drinking water wells within 1,000 ft?		
Ingestion-Potential	Protected groundwater source?		Maximum K: 163 () m/d
	Institutional control within 1,000 feet?		Minimum TDS: () mg/L
Vapors	Explosive vapor levels within 500 ft?		
	Institutional control within 500 feet? GW Sources: Soil Sources:		
Plastic water lines	Shallowest depth to groundwater? () feet		
	Plastic water line within 200 feet of source?		
Surface water	Designated use segment within 500 feet?		Designation(s):
	Any surface water within 200 feet?		Pass visual inspection?

Site HydrogeologyFlow/Migration

Head gradient (i, ft/ft)	0.002
Hydraulic conductivity (K, m/day)	163
MAIN PLUME/FLOW(degrees)	180
RANGE of Plume/FLOW (degrees)	150
Upgradient (fraction)	0.010

Source Dimensions

Groundwater Plume Source Width (Sw-GW) (ft)	252
Soil Plume Source Width (Sw-Soil) (ft)	-1
Groundwater Plume Source Length (W-GW) (ft)	284
Soil Plume Source Length (W-Soil) (ft)	-1

Soil Parameters

	<u>Default</u>
Fraction organic carbon (foc) (g-C/g-Soil)	0.01
Total Porosity (Qt)(cm^3/cm^3-Soil)	0.3
Soil bulk density (ps)(g/cm^3-Soil)	1.86

Tier 2 Data Before Modeling Justification Section

Justification must be provided if diesel and/or waste oil was stored at the site and the answer given for the following question is "No": "TEH-diesel required?" and /or "TEH-waste oil required?". Justification must also be provided if the answer to "Groundwater encountered?" was answered "No" or anytime an answer given may not be obvious to the IDNR.

Site Hydrogeology Justification Section

Explain which points were used to determine the gradient at the site. If necessary for clarification, provide justification for the variables used in the Site Hydrogeology section here.

Tier 2 Groundwater Analytical Data (ug/L), V-3.00,														
Boring/ Well #	Date Sampled	Elevations(ASL)				Group 1				Group 2		Naph.	FP Type	FP Default?
		Ground	TOC	TOS	SWL	B	T	E	X	TEH-D	TEH-WO			
GMW1	11/19/2007	N	N	N	N	<2.	<2.	<2.	<5.	N	N	N	N	N
GMW2	08/27/1997	N	N	N	N	20.	7,380.	15,200.	42,200.	N	N	N	N	N
GMW2	09/17/2009	N	N	N	N	<2.	5.	19.	87.	N	N	N	N	N
GMW3	09/27/2011	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
GMW3	09/26/2012	N	N	N	N	4.66	<1.	<1.	351.	N	N	N	N	N
GMW6	12/09/2011	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
GMW7R	07/28/2003	N	N	N	N	62.	480.	7,770.	22,400.	N	N	N	N	N
GMW7R	03/19/2012	N	N	N	N	<5.	<10.	1,580.	6,040.	N	N	N	N	N
GMW7R	09/26/2012	N	N	N	N	<5.	<10.	2,370.	9,070.	N	N	N	N	N
GMW8	09/27/2011	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
GMW8	09/26/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
GMW9R	12/11/2002	N	N	N	N	84.	32,200.	33,440.	115,000.	N	N	N	N	N
GMW9R	03/19/2012	N	N	N	N	<50.	2,870.	10,400.	41,700.	N	N	N	N	N
GMW9R	09/26/2012	N	N	N	N	<50.	3,430.	17,900.	69,900.	N	N	N	N	N
GWM10R	08/28/1997	N	N	N	N	43.	8,260.	28,900.	371,000.	N	N	N	N	N
GWM10R	09/17/2009	N	N	N	N	3.	72.	875.	3,060.	N	N	N	N	N
GMW13	09/27/2004	N	N	N	N	20.	13,200.	37,800.	135,000.	N	N	N	N	N
GMW13	09/27/2011	N	N	N	N	<50.	5,430.	16,000.	77,400.	N	N	N	N	N
GMW13	09/26/2012	N	N	N	N	<50.	12,900.	24,700.	105,000.	N	N	N	N	N
GMW15	12/09/2011	N	N	N	N	14.	<10.	10,200.	32,600.	N	N	N	N	N
GMW15	03/19/2012	N	N	N	N	<50.	<100.	6,940.	24,700.	N	N	N	N	N
GMW15	09/26/2012	N	N	N	N	<10.	<20.	6,570.	23,000.	N	N	N	N	N
GMW16	11/06/2009	N	N	N	N	5.	37.	5,940.	20,200.	N	N	N	N	N
GMW16	09/27/2011	N	N	N	N	<5.	19.3	1,080.	3,060.	N	N	N	N	N
GMW16	09/26/2012	N	N	N	N	<5.	<10.	507.	1,480.	N	N	N	N	N
GMW17	08/01/2003	N	N	N	N	20.	400.	1,700.	7,480.	N	N	N	N	N
GMW17	03/19/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
GMW17	09/26/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
GMW18	12/22/2005	N	N	N	N	2.	31.	574.	1,380.	N	N	N	N	N
GMW18	09/27/2011	N	N	N	N	<0.5	<1.	6.85	35.8	N	N	N	N	N
GMW18	09/26/2012	N	N	N	N	<0.5	<1.	49.2	172.	N	N	N	N	N
GMW19	03/18/2010	N	N	N	N	3.	10.	984.	4,280.	N	N	N	N	N
GMW19	03/19/2012	N	N	N	N	1.	<1.	158.	680.	N	N	N	N	N
GMW19	09/26/2012	N	N	N	N	1.53	<1.	332.	1,820.	N	N	N	N	N
GMW20	11/21/2003	N	N	N	N	2.	7.	1,320.	4,640.	N	N	N	N	N
GMW20	03/19/2012	N	N	N	N	<2.5	5.	1,000.	3,190.	N	N	N	N	N

Tier 2 Groundwater Analytical Data (ug/L), V-3.00,														
Boring/ Well #	Date Sampled	Elevations(ASL)				Group 1				Group 2		Naph.	FP Type	FP Default?
		Ground	TOC	TOS	SWL	B	T	E	X	TEH-D	TEH-WO			
GMW20	09/26/2012	N	N	N	N	<5	<10	1,410.	4,250.	N	N	N	N	N
GMW21	10/27/2004	N	N	N	N	2.	20.	6,760.	27,200.	N	N	N	N	N
GMW21	03/19/2012	N	N	N	N	4.	<5.	4,870.	5,100.	N	N	N	N	N
GMW21	09/26/2012	N	N	N	N	5.8	<10.	3,630.	10,400.	N	N	N	N	N
GMW22	04/05/2004	N	N	N	N	2.	2.	3,270.	6,220.	N	N	N	N	N
GMW22	11/20/2008	N	N	N	N	4.	<2.	151.	2,990.	N	N	N	N	N
GMW23	04/05/2004	N	N	N	N	2.	2.	26.	67.	N	N	N	N	N
GMW23	04/12/2006	N	N	N	N	<2.	<2.	<2.	<5.	N	N	N	N	N
GMW24	04/12/2006	N	N	N	N	<2.	<2.	<2.	<5.	N	N	N	N	N
GMW25	11/23/2004	N	N	N	N	2.	413.	744.	3,680.	N	N	N	N	N
GMW25	03/19/2012	N	N	N	N	<0.5	<1.	273.	44.	N	N	N	N	N
GMW25	09/26/2012	N	N	N	N	<0.5	<1.	176.	542.	N	N	N	N	N
GMW26	04/12/2006	N	N	N	N	<2.	<2.	<2.	<5.	N	N	N	N	N
GMW27	04/12/2006	N	N	N	N	<2.	64.	143.	548.	N	N	N	N	N
GMW28	04/12/2006	N	N	N	N	<2.	<2.	<2.	<5.	N	N	N	N	N
GMW29	04/12/2006	N	N	N	N	<2.	<2.	<2.	<5.	N	N	N	N	N
GMW30	03/19/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
GMW30	09/26/2012	N	N	N	N	<0.5	<1.	<1.	3.21	N	N	N	N	N
GMW31	04/12/2006	N	N	N	N	<2.	<2.	<2.	<5.	N	N	N	N	N
GMW32	04/12/2006	N	N	N	N	<2.	<2.	<2.	<5.	N	N	N	N	N
GMW33	06/19/2006	N	N	N	N	20.	7,790.	21,500.	93,900.	N	N	N	N	N
GMW33	03/19/2012	N	N	N	N	<0.5	<1.	58.5	304.	N	N	N	N	N
GMW33	09/26/2012	N	N	N	N	0.71	<1.	61.1	273.	N	N	N	N	N
GMW34	12/07/2010	N	N	N	N	10.	1.	4,340.	12,500.	N	N	N	N	N
GMW34	03/19/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
GMW34	09/26/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
MW1	09/27/2011	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
MW1	09/26/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
MW5	09/27/2011	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
MW5	09/26/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
TC6	10/05/2010	N	N	N	N	50.	100.	22,300.	79,800.	N	N	N	N	N
TC6	03/19/2012	N	N	N	N	<50.	<100.	15,700.	54,300.	N	N	N	N	N
TC6	09/26/2012	N	N	N	N	<50.	<100.	14,900.	54,200.	N	N	N	N	N
TC7	03/19/2012	N	N	N	N	<0.5	<1.	188.	329.	N	N	N	N	N
TC7	09/26/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N

Tier 2 Groundwater Analytical Data (ug/L), V-3.00,

Boring/ Well #	Date Sampled	Elevations(ASL)				Group 1				Group 2		Naph.	FP Type	FP Default?
		Ground	TOC	TOS	SWL	B	T	E	X	TEH-D	TEH-WO			
TC22	09/27/2011	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
TC23	09/27/2011	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
TC23	09/26/2012	N	N	N	N	<0.5	<1.	<1.	<3.	N	N	N	N	N
RW102	10/13/1992	N	N	N	N	72.	13,100.	21,800.	81,800.	N	N	N	N	N
RW102	09/17/2009	N	N	N	N	10.	2,160.	6,770.	22,800.	N	N	N	N	N
RW104	05/12/2009	N	N	N	N	17.	455.	15,500.	48,700.	N	N	N	N	N
RW104	09/17/2009	N	N	N	N	19.	1,030.	9,890.	29,200.	N	N	N	N	N

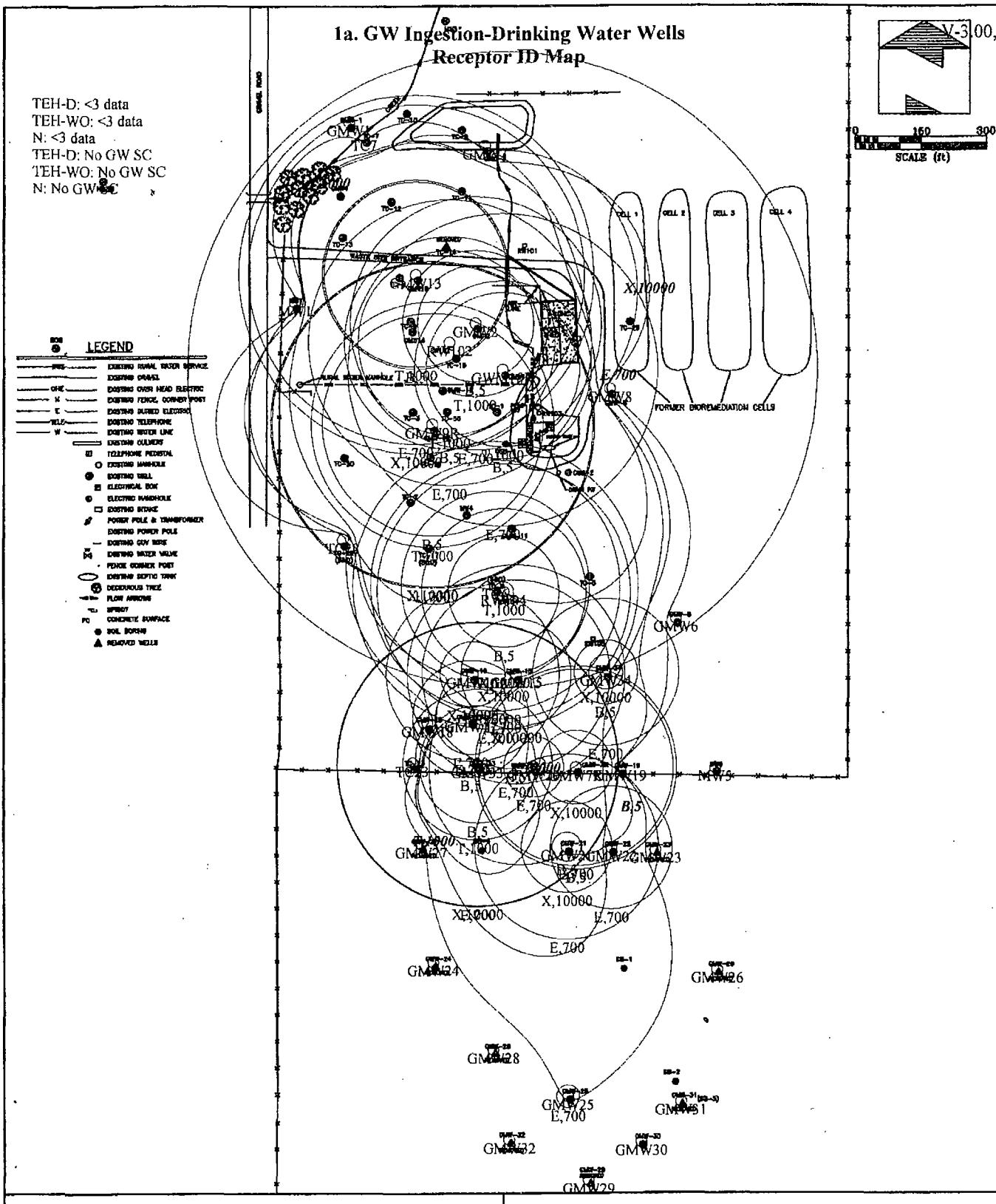


FIGURE 1
SITE MAP
VOGEL PAINT WASTE SITE
1 inch = 300 feet
MAURICE, IOWA

ACAD\GEOTEK\

PROJECT#: 91-400

DRAWN BY: PAC **CHECKED BY:**

**GEOTEK ENGINEERING &
TESTING SERVICES, INC.**

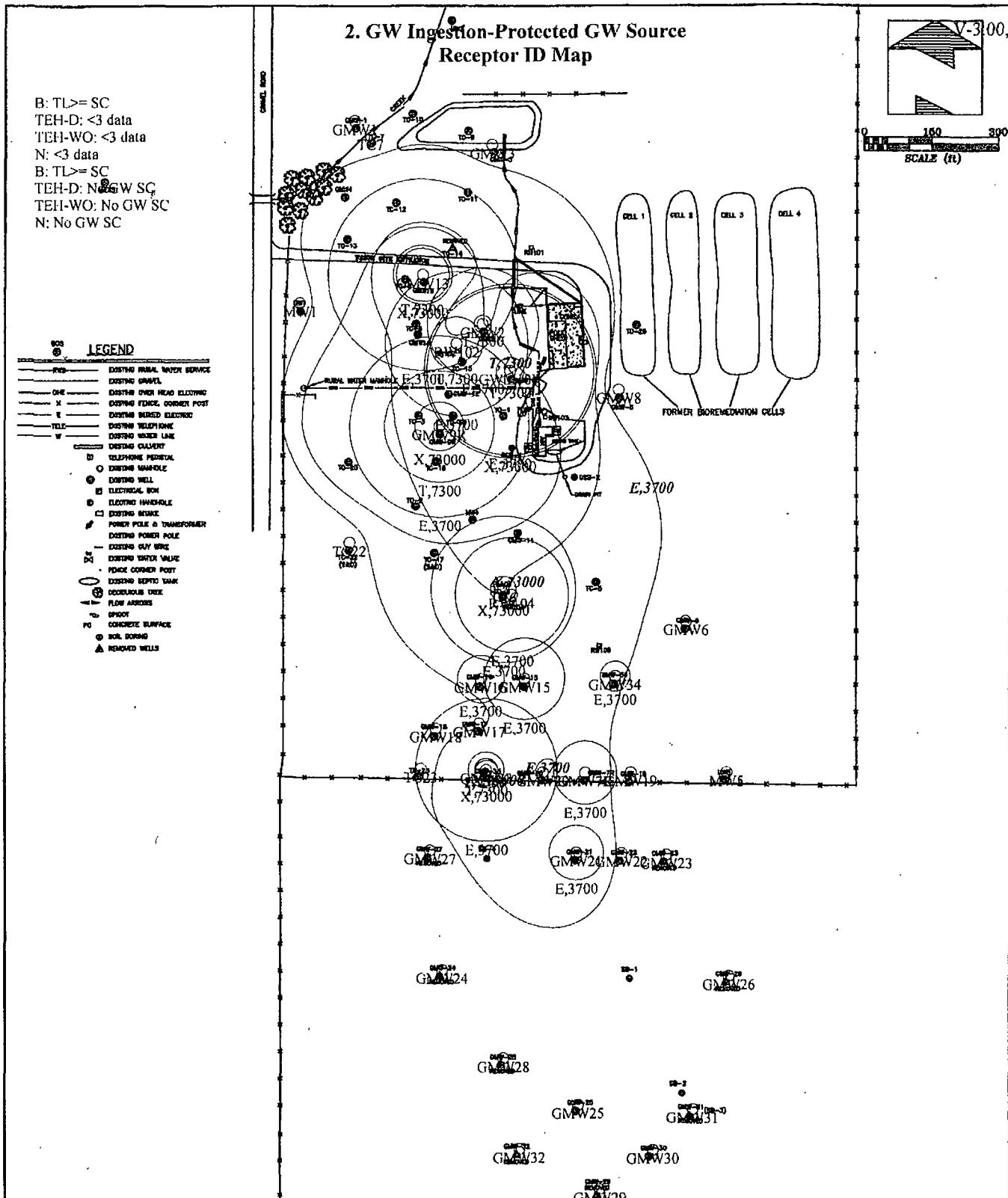


FIGURE 1
SITE MAP
VOGEL PAINT WASTE SITE
inch = 300 feet
MAURICE, IOWA

ACAD\GROTEK\

PROJECT #: 91-400

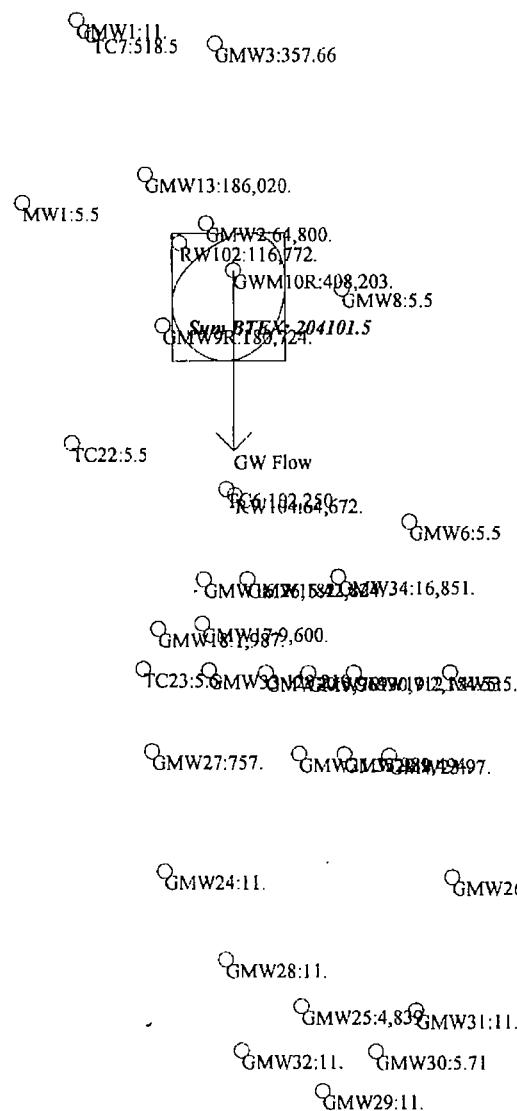
DRAWN BY: PAC CHECKED BY:

**GEOTEK ENGINEERING &
TESTING SERVICES, INC.**

GW: Source Width and Length Estimation: Sum BTEX

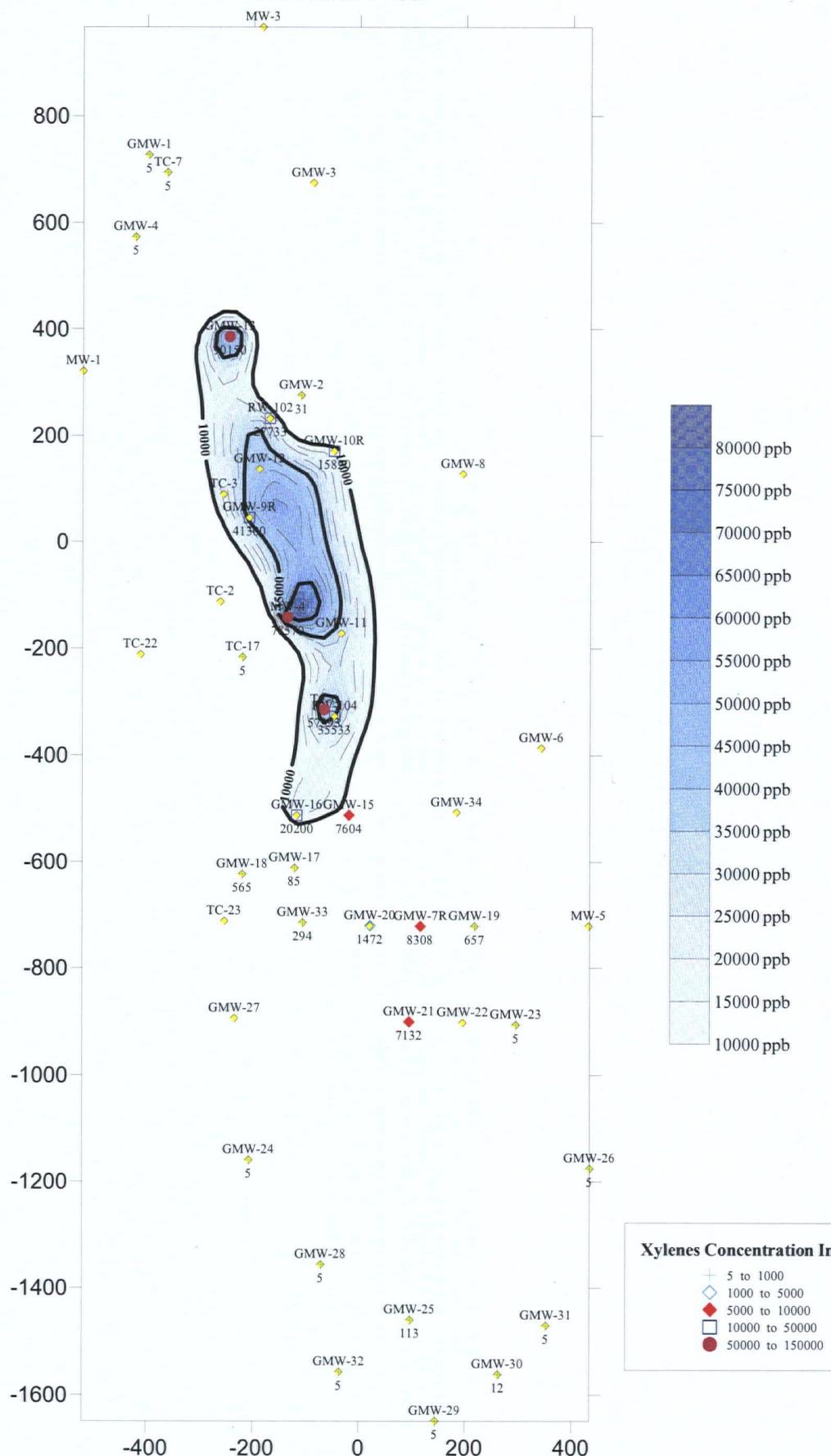
V-3.00,

Source: GW (ug/L)
Maximum Concentration: 408203
Contour Concentration: 204101.5
Source Width (Sw): 252. feet
Source Length (W): 284. feet



APPENDIX D

Average Xylenes Concentrations 2009
Vogel Paint Waste Site
Maurice, Iowa
GeoTek #91-400



Grid Volume Computations

Tue Mar 12 17:07:22 2013

Upper Surface

Grid File Name: U:\LWatts\Surfer 11\out.grd
Grid Size: 100 rows x 41 columns

X Minimum: -520.4
X Maximum: 433.6
X Spacing: 23.85

Y Minimum: -1649.3
Y Maximum: 727
Y Spacing: 24.00303030303

Z Minimum: 2.5540498558008
Z Maximum: 76311.38562343

Lower Surface

Level Surface defined by Z = 10000

Volumes

Z Scale Factor: 1

Total Volumes by:

Trapezoidal Rule: -8833834828.9972
Simpson's Rule: -8876833575.6653
Simpson's 3/8 Rule: -8852816903.3431

Cut & Fill Volumes

Positive Volume [Cut]: 2729247516.7177
Negative Volume [Fill]: 11563082345.715
Net Volume [Cut-Fill]: -8833834828.9972

Areas

Planar Areas

Positive Planar Area [Cut]: 156550.78851395
Negative Planar Area [Fill]: 1186469.1633042

Blanked Planar Area: 923970.24818182
Total Planar Area: 2266990.2

Surface Areas

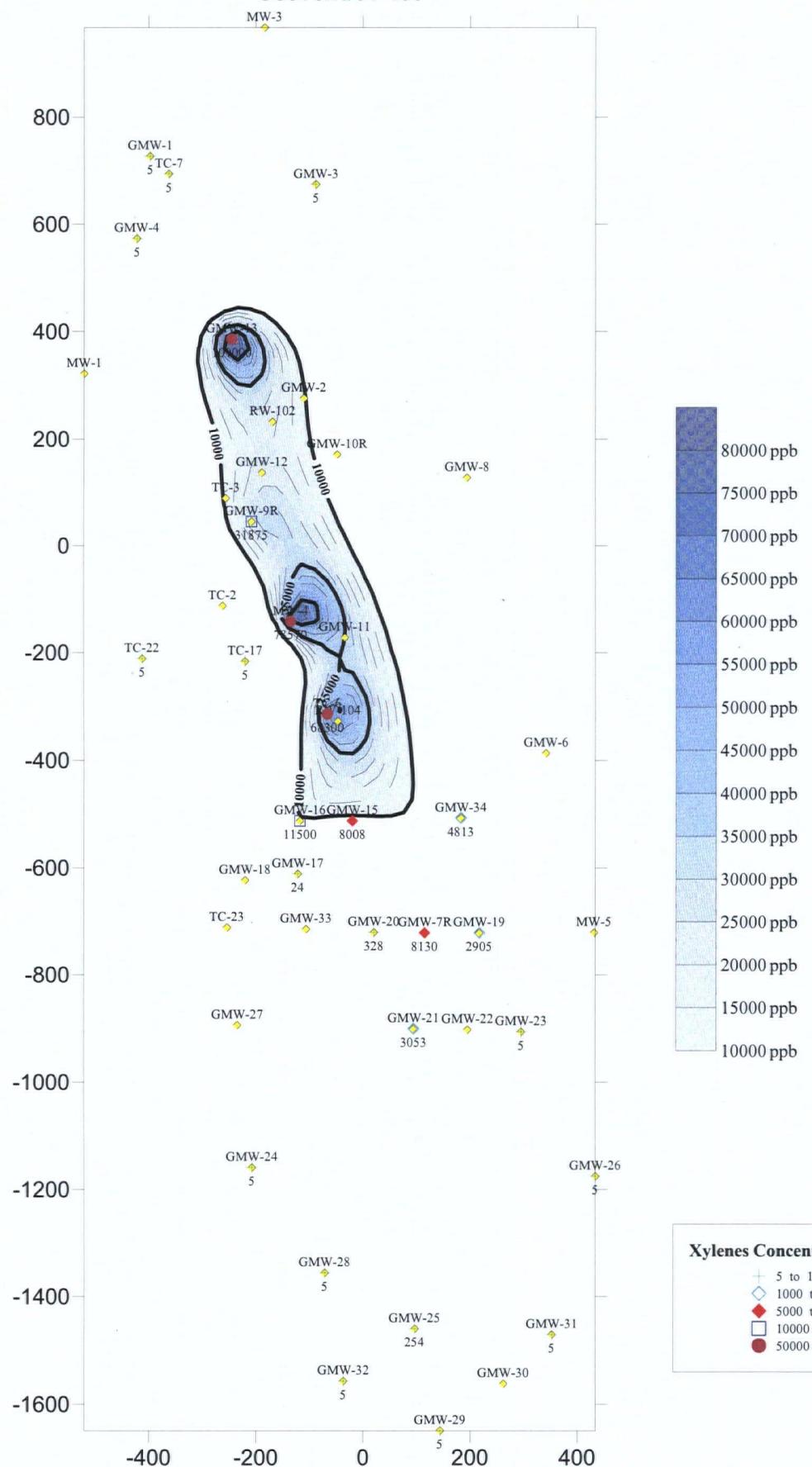
Positive Surface Area [Cut]: 65295210.304484
Negative Surface Area [Fill]: 28642785.886497

Average Xylenes Concentrations 2010

Vogel Paint Waste Site

Maurice, Iowa

GeoTek #91-400



Grid Volume Computations

Tue Mar 12 17:12:25 2013

Upper Surface

Grid File Name:	U:\LWatts\Surfer 11\out.grd
Grid Size:	100 rows x 41 columns
X Minimum:	-520.4
X Maximum:	433.6
X Spacing:	23.85
Y Minimum:	-1649.3
Y Maximum:	727
Y Spacing:	24.00303030303
Z Minimum:	2.4735391376731
Z Maximum:	79395.830516669

Lower Surface

Level Surface defined by Z = 10000

Volumes

Z Scale Factor: 1

Total Volumes by:

Trapezoidal Rule:	-8458882689.4221
Simpson's Rule:	-8502622801.9473
Simpson's 3/8 Rule:	-8479175500.6639

Cut & Fill Volumes

Positive Volume [Cut]:	2672771260.9082
Negative Volume [Fill]:	11131653950.33
Net Volume [Cut-Fill]:	-8458882689.4222

Areas

Planar Areas

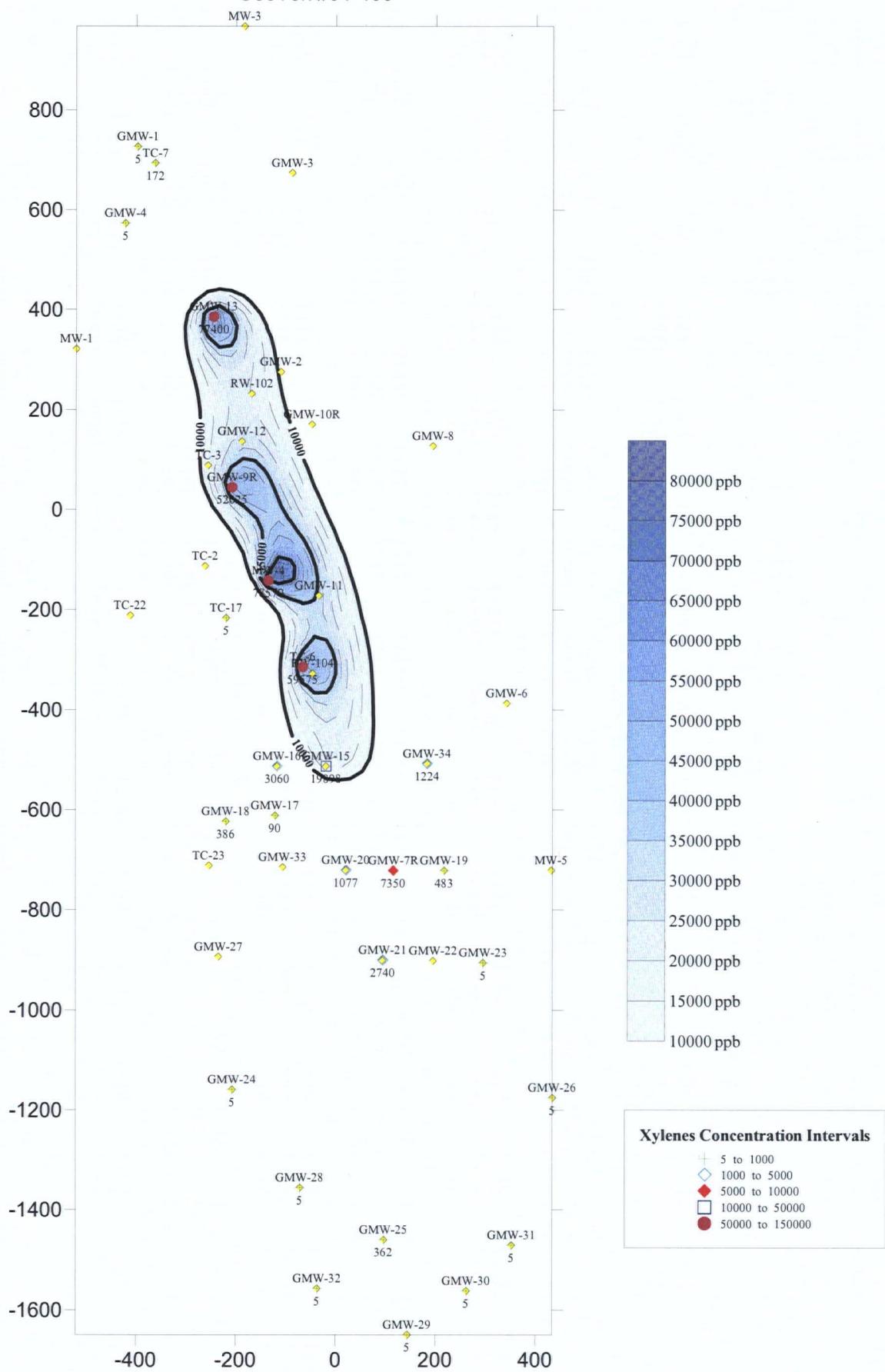
Positive Planar Area [Cut]:	178570.53036871
Negative Planar Area [Fill]:	1164449.4214495

Blanked Planar Area: 923970.24818182
Total Planar Area: 2266990.2

Surface Areas

Positive Surface Area [Cut]: 67341728.799269
Negative Surface Area [Fill]: 28982626.610179

Average Xylenes Concentrations 2011
 Vogel Paint Waste Site
 Maurice, Iowa
 GeoTek #91-400



Grid Volume Computations

Tue Mar 12 17:17:41 2013

Upper Surface

Grid File Name: U:\LWatts\Surfer 11\out.grd
Grid Size: 100 rows x 41 columns

X Minimum: -520.4
X Maximum: 433.6
X Spacing: 23.85

Y Minimum: -1649.3
Y Maximum: 727
Y Spacing: 24.00303030303

Z Minimum: 2.2218966641019
Z Maximum: 75059.615906551

Lower Surface

Level Surface defined by Z = 10000

Volumes

Z Scale Factor: 1

Total Volumes by:

Trapezoidal Rule: -8681330185.2709
Simpson's Rule: -8724500946.5274
Simpson's 3/8 Rule: -8698349984.8024

Cut & Fill Volumes

Positive Volume [Cut]: 2611170316.8259
Negative Volume [Fill]: 11292500502.097
Net Volume [Cut-Fill]: -8681330185.2709

Areas

Planar Areas

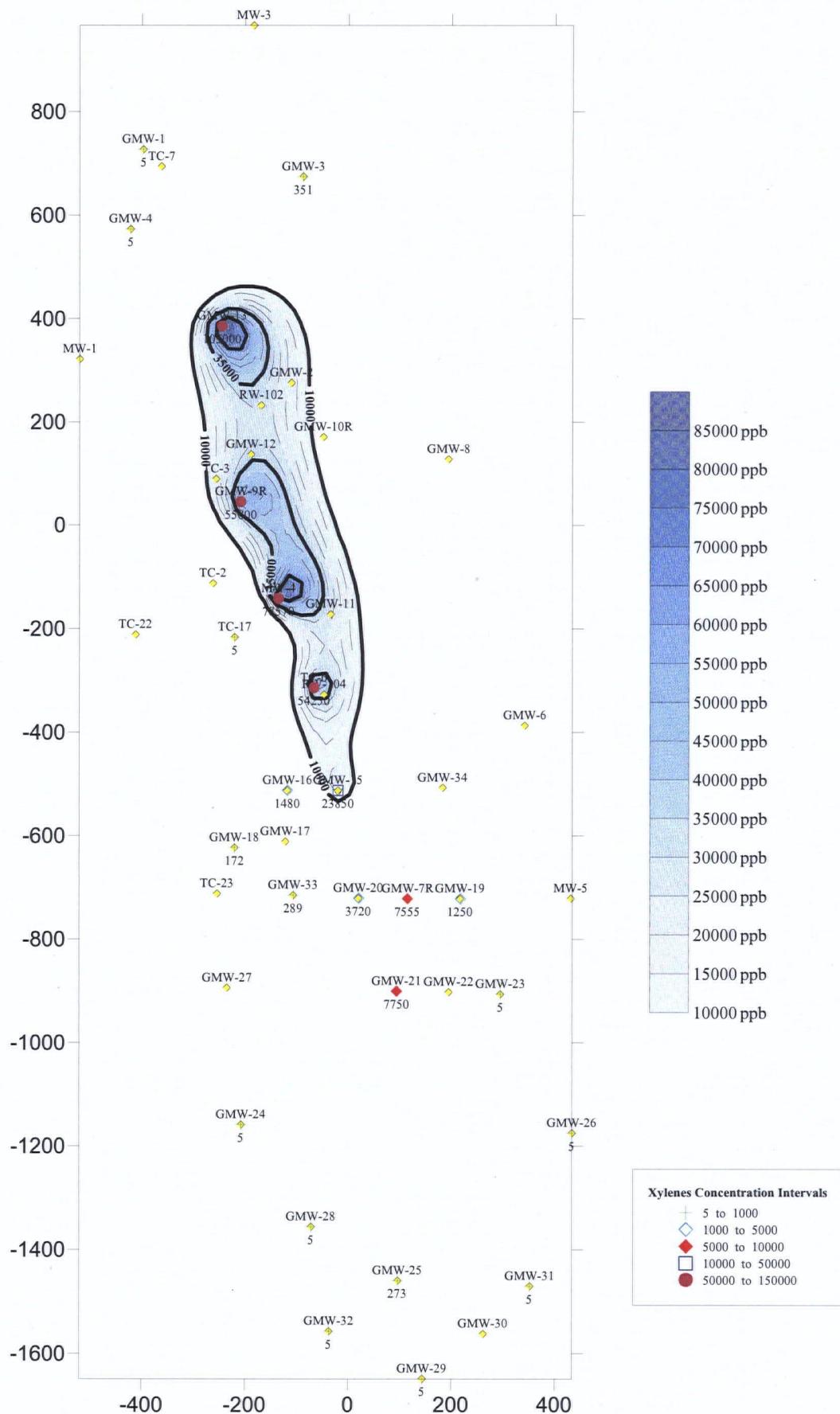
Positive Planar Area [Cut]: 173170.09108244
Negative Planar Area [Fill]: 1169849.8607357

Blanked Planar Area: 923970.24818182
Total Planar Area: 2266990.2

Surface Areas

Positive Surface Area [Cut]: 64476184.256297
Negative Surface Area [Fill]: 27597672.058168

Average Xylenes Concentrations 2012
Vogel Paint Waste Site
Maurice, Iowa
GeoTek #91-400



Grid Volume Computations

Wed Mar 13 08:55:18 2013

Upper Surface

Grid File Name: U:\LWatts\Surfer 11\out.grd
Grid Size: 100 rows x 41 columns

X Minimum: -520.4
X Maximum: 433.6
X Spacing: 23.85

Y Minimum: -1649.3
Y Maximum: 727
Y Spacing: 24.00303030303

Z Minimum: 2.3668820134802
Z Maximum: 82857.452862186

Lower Surface

Level Surface defined by Z = 10000

Volumes

Z Scale Factor: 1

Total Volumes by:

Trapezoidal Rule: -8457097372.3131
Simpson's Rule: -8499227775.0616
Simpson's 3/8 Rule: -8476359072.1957

Cut & Fill Volumes

Positive Volume [Cut]: 2791969504.3861
Negative Volume [Fill]: 11249066876.699
Net Volume [Cut-Fill]: -8457097372.3131

Areas

Planar Areas

Positive Planar Area [Cut]: 169208.54433168
Negative Planar Area [Fill]: 1173811.4074865

Blanked Planar Area: 923970.24818182
Total Planar Area: 2266990.2

Surface Areas

Positive Surface Area [Cut]: 69399353.20574
Negative Surface Area [Fill]: 29539172.123995